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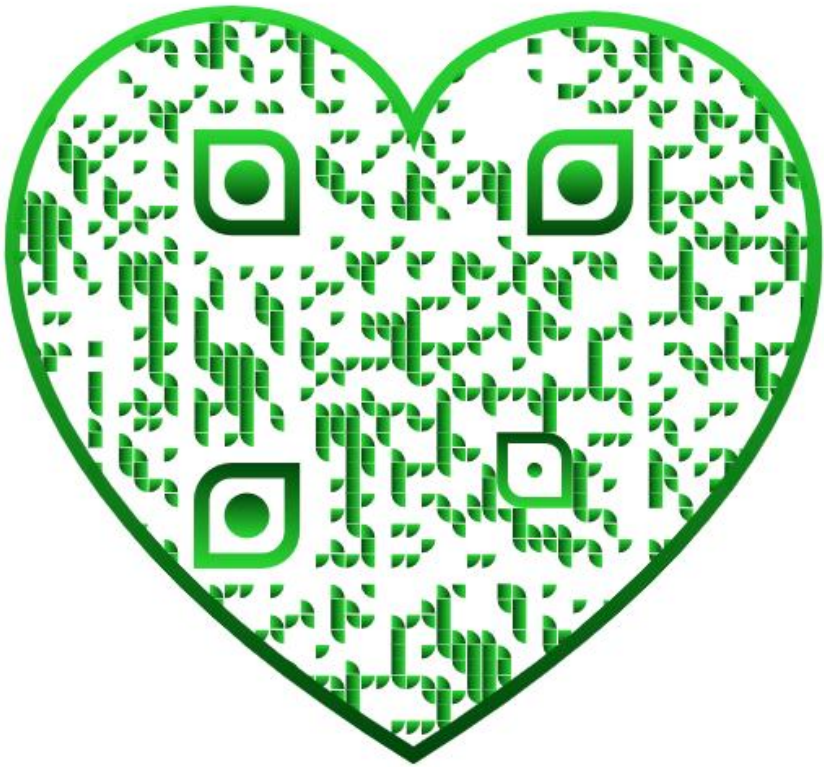
SATYAJIT DAS, global finance expert

VIVEK KAUL

EASY MONEY

BOOK 2

THE EVOLUTION OF THE GLOBAL FINANCIAL SYSTEM TO THE GREAT BUBBLE BURST



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To Ma and Papa, for letting me be!

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Foreword

One of the lessons of history is that we never learn from it. This has never been truer than with recent economic history. The story of twentieth-century global economics has been one of a periodic build-up in money supply that led to booms, followed by busts. This has not prevented economists from routinely prescribing more money printing to increase growth and decrease unemployment. Over the last two centuries, the world has tried everything from adopting the gold standard to printing endless amounts of fiat currency (as is the case now).

It has, as a result, experienced everything from hyperinflation to depression. But try getting a consensus among economists on what needs to be done in a particular situation, and you will get suggestions and opinions stemming basically from an ideological orientation – nothing is learnt from actual economic experience. We have Paul Krugman arguing that the Federal Reserve of the United States has not printed enough money since unemployment is still high and inflation low, while the Republican Right says the government is getting too big, and spending and debt must be cut. Despite massive budget deficits, the Right will want taxes cut, making it impossible to square the circle.

If you want to read about all the experimentation and follies of governments and economists involving the use and abuse of money over the ages, you can do no better than to read Vivek Kaul's eminently readable *Easy Money*. The first part of this book, published in 2013, spoke of the prehistory of money to its status before the First World War. In this volume, Kaul brings you closer to the evolution of money in the twenty-first century. He ends with the dot-com bust which happened in the early years of the millennium.

Today, not only the United States but also the European Union and Japan are working their currency printing presses to the limit, with the belief that when the economy is so sluggish, unemployment so high, and inflation so low, a little more cannot hurt. Those who warn about the build-up of excessive debt and the extraordinary puffing up of central

banks' balance sheets will be shouted down as Cassandras out of touch with reality. In fact, everyone is in denial on the dangers of excess money despite three events in recent memory that signal this danger: the Asian financial crisis of the late 1990s, the dot-com collapse of the last decade, and the Lehman crisis.

Why does strong evidence of financial folly not register with politicians and central bankers? The answer has to lie in the real-world calculations of the political economy. Nobody wants a bust or deflation during his watch – and politicians and bankers will do everything to postpone the event by printing money endlessly. Even if it results in inflation – as we are witnessing in India right now.

This leaves us the question of why economists fall into the same trap that politicians and central bankers do. The answer is probably that busts are precipitated either by significant events (like large sub-prime defaults) or by shifts in public expectation. And public expectations take a long time to switch gears. Anyone predicting a global bust in 2003, when the global boom took off, would have been wrong for five years; similarly, those who have warned of a crisis due to quantitative easing of policies since 2008 continue to be wrong even at the end of 2013.

But all bubbles ultimately burst. When the music stops, the ones holding the pillow will be caught out. Each person thinks this will not happen on their watch. The problem is that no one can predict the financial doomsday with any degree of accuracy, and this gives politicians and economists the right to pretend that this time, it is different.

Vivek Kaul's *Easy Money* will tell you how wrong this conclusion is. But don't expect policymakers to change their behaviours when they are told the truth. They will simply deny or ignore it.

R. Jagannathan
Editorial director, *Swarajya*

Preface

On Monday, 29 September 2008, I walked into the Mumbai office of the *Daily News and Analysis* (*DNA*), the newspaper that I used to work for, wondering what to write for the day. As the personal finance editor, it was my job to fill up (for the lack of a better expression) the personal finance page every day. But it was one of those Monday mornings (actually afternoon!) when one really did not feel like working. And furthermore, for once, I hadn't a clue of what I wanted to write. I had also run out of expert columns that I used to save precisely for such dry days.

Two weeks earlier, at 1.45 a.m. on 15 September 2008, Lehman Brothers, the smallest of the big investment banks on Wall Street, had gone bust and had filed for bankruptcy. Since then, business journalists in India had turned into jargon-spewing monsters. Any random write-up on the 'financial crisis' that was unfurling in the United States would have words such as sub-prime, securitization, collateralized debt obligations (CDOs), alternative A-paper (Alt-A), slice and dice and what not.

Going through one such article on that day, I wondered whether people writing this stuff actually understood the terms they were using so liberally. But more than that, I found it rather embarrassing that I did not understand most of these 'terms' except securitization, on which I had written now and then, from the time I started writing full time in late 2004.

That gave me my idea for the day. I thought, 'Let me write a piece which tries to explain some of these terms that were being used.' It was an act of pure self-indulgence. By then, I had realized that if one really wanted to understand something complicated, the best way to do it was to write about it.

And so I did. But as soon as I had started writing I realized that there were chances that the article would turn out to be one of the most boring ones that I had written. All I was trying to do was explain a series of terms to myself and hopefully the reader. The trouble was that

there was no integrating theme or even a context for that matter. And all said and done, I was writing for a newspaper and not compiling a dictionary.

Just as I was about to give up, another brainwave saved the day. I wove a fictional story around the financial terms I was trying to understand, to build some overall context and at the same time to be able to explain all the terms that I wanted to. And that is how I came up with two unnamed characters, a man and a woman, in conversation.

The article was headlined 'Why Is the Wall St Resting in Peace?' and was scheduled to appear the next day, on 30 September 2008. It started with a woman calling a man to ask, 'Why is the Wall Street going bust?' And during the course of the 'flirtatious' duologue that takes place at an ungodly hour, 2.30 a.m., the man explains the trouble erupting at Wall Street and elucidates the meaning of several esoteric terms that had been troubling me, the writer of this piece.

I was very happy at the end of the day to have been able to write something different and more importantly, to have been able to fill up the 'space'. Thankfully, I worked with editors who did not have fixed notions about what a newspaper should carry. Therefore, they let it go.

When I came to office the next day I was in for a surprise. My mailbox had some twenty-five emails from readers saying that they had loved the piece. This had never happened before; even what I thought were my best pieces would get no more than five to ten reader emails, spaced over a couple of days. But more importantly, what I understood from the response was that I was not the only one who had not been able to comprehend the pecuniary parlance. There were others like me out there. What the feedback also told me was that this whole concept of readers being more interested in what was happening in their own city and country was not always entirely true.

People wanted to know and understand what the 'subprime' crisis, as the financial crisis in the United States had been termed then, was really all about. This encouraged me to write a second piece and then a third and so the series of conversations between the anonymous man and woman continued. The feedback was tremendous. As I kept writing, more and more complicated terms like negative amortization, option adjustable-rate mortgages (ARMs), quantitative easing and so on were thrown up. I tried explaining those terms and the role they had to play in the financial crisis.

Now, nearly five years after I first started to write on the financial crisis, I have produced around a hundred and fifty pieces on the topic. And still continue to do so. The rate at which things are currently

unfolding, writing about the economic meltdown should help provide my daily bread-and-butter for the next few years, perhaps even a decade.

***

Some five weeks after I wrote my first piece on the financial crisis, I went to interview William (Bill) Bonner, an 'unconventional' economist, and the president and CEO of Agora Publishing, one of the world's largest financial newsletter companies. The one hour I spent talking to Bill, opened up a whole new world for me. My first question to Bill was, 'When did the current financial crisis start?'

'That depends on how far we want to go back. I put the beginning of the crisis back to 15 August 1971. On that day Richard Nixon closed the famous gold window at the treasury,' he replied.[1]

After the Second World War, central banks around the world could convert the American dollars they held as a part of their foreign exchange reserves into gold by presenting them to the United States of America. The United States had committed to converting its paper dollars into gold at the rate of $35 being worth one troy ounce (roughly 31.1 gm) of gold.

President Richard Nixon had suspended this conversion on 15 August 1971, as America was running very low on its gold reserves.

Bill's reply startled me. How could something happening in 2008 have its origins as far back as 1971? In early 2009, a couple of months after meeting Bill, I started reading the first lot of books stemming from the financial crisis. I also started to read books which had been published (by William Bonner and several other authors) since 2000, predicting the slump brewing in the United States of America. The more I read, the more questions I had and that led to even more reading. Gradually, I started reading books about the history of money, finance, and economics which eventually culminated in me poring over research papers published over the last 300 years.

And after all this heuristic, fact-finding exploration that lasted for nearly two-and-a-half years, some sort of a bigger picture started to emerge in my mind. I realized that Bill was right. A lot of what has happened over the last four to five years has been primarily on account of a lot of things that have happened since 1971. However, a lot of it is also on account of things that occurred before 1971.

Various experts have come up with various reasons behind the financial downturn. Some feel the crisis was because Wall Street was greedy. But then the question to ask here is: When was Wall Street not

greedy? And given this, why didn't financial crises happen all the time? Some others feel that securitization of home loans turned out to be a very risky thing to do. Still some others feel that Alan Greenspan, the then chairman of the Federal Reserve of the United States, kept interest rates too low for too long, leading to a housing bubble and then the financial crisis.

Yes, these were reasons behind the financial crisis. But then there was a lot more to it. The real reason behind the crash is an agglomeration of these reasons and many more reasons.

It is about how the concept of money and the financial system have evolved over a long period of time. It is about commodity money giving way to silver and gold and finally to paper.

It is about Marco Polo travelling to China and discovering that under the rule of the Mongol king Kublai Khan, paper notes issued by the king were being used as money instead of gold and silver coins as was the case in Europe.

It is about Columbus setting out to sea to discover India and ending up discovering San Salvador and thus helping the Spaniards discover huge mines of gold and silver.

It is about the merchants of China, Italy and London, who first started using paper money as a scam.

It is about the rise of banks and bankers who soon realized that profits are inversely proportional to the amount of capital they maintain in the business.

It is about Charles I seizing the gold deposited by London merchants at the Tower of London and thus encouraging them to move on to paper money.

It is about the need of the British monarch to constantly raise money to meet his expenses, something that finally led to the formation of the Bank of England and the concept of a central bank. It is about a single decision made by Isaac Newton, famous physicist, but also the master of the British Mint, way back in 1717.

It is about the American and French Revolutions which gave more legitimacy to paper money.

It is about the bankers of Genova buying annuities issued by the French government and then selling bonds against them and thus coming up with what we now know as securitization.

It is about financial firms and banks being rescued by the governments starting in the nineteenth century and thus creating a moral hazard. This encouraged firms to take on more risk in the years to come, confident that the government and the central bank would come to their

rescue whenever another crisis happened. It is about the socialization of risk.

It is about the close relationship between the American government and Wall Street, something which has held true for more than a hundred years now.

It is about seven individuals who had close associations with Wall Street getting together and putting forward the idea which finally led to the formation of the Federal Reserve of the United States in 1913, the American central bank.

It is about Hitler destroying Europe and helping America emerge as a global superpower.

It is about Winston Churchill, who, as the British Chancellor of the Exchequer, refused to listen to the pleas made by John Maynard Keynes and took Britain back to the gold standard in 1925 at an exchange rate which simply did not make sense. This destroyed the British pound as the leading international currency of the world.

It is about the United States agreeing to exchange gold for dollars after the Second World War at the rate of $35 per ounce and largely sticking to its promise until 1971.

It is about the Al Saud dynasty of Saudi Arabia agreeing to price oil in terms of dollars and thus helping the dollar overtake the pound as the international reserve currency.

It is about politicians bastardizing the theories of Keynes and giving too much importance to those of Milton Friedman.

It is about French president Charles de Gaulle launching a spirited attack against the dollar in the mid-1960s, which set in motion events that led to a pure paper-money system coming into existence in the early 1970s.

It is about countries around the world which had doubts about holding dollars backed by gold in the 1950s and the '60s, but were totally at ease while holding paper dollars not backed by anything else in the 1970s and the '80s.

It is about Penn Central, America's largest railroad, going bankrupt in 1970, leading to companies which wanted to be rated having to pay rating agencies for it.

It is about the Organization of the Petroleum Exporting Countries (OPEC) deciding to continue pricing oil in dollars in the late 1970s, after almost deciding against it.

It is about Alan Greenspan deviating from the wisdom of his mentor Ayn Rand and coming up with the Greenspan put, which made the world believe that come what may, the economy will always keep doing

well.

It is about America, the doyen of capitalism, becoming a great welfare state.

It is about communist China becoming the most capitalistic country in the world, earning billions of dollars doing so, and using those dollars to help finance the great American fiscal deficit.

It is about right decisions made at one point of time, which had negative implications at another point of time.

It is about one thing leading to another and then another and finally culminating with the financial meltdown that started in mid-September 2008 after the investment bank, Lehman Brothers, collapsed.

All this and more were responsible for creating humongous Ponzi schemes which are now unravelling.

W.G. Sumner wrote in a research paper titled 'Shall Silver Be Demonetized?' in June 1885 that even though money is 'one of the oldest human inventions, and one of the most important, there is none that has been perfected so slowly'.[2]

What Sumner wrote nearly 130 years ago, largely remains true to this day. Money and the financial system are still work in progress. They are still evolving. And anything that is still evolving has its share of problems.

Vivek Kaul

Introduction

Dear Reader, you are now in possession of the second volume of *Easy Money*. The first volume discussed the evolution of money and the financial system from time immemorial to the time of the First World War and beyond. This volume discusses how the global financial system evolved in the aftermath of the First World War and how that finally led to the dot-com crash in the United States in the early 2000s.

In the aftermath of the First World War, Europe was in major trouble. The United Kingdom, which was once the premier nation in the world, had lost to its former colony, the US. The US was the place to be in the 1920s, the time when the country started reaping the benefits of the Industrial Revolution.

Another impact of the First World War was that London was no longer the world's financial capital. New York had evolved as a parallel destination during the First World War, which never reached the shores of the US. The American dollar was in the process of overtaking the British pound as the premier international currency of the world.

All this worked together to create an air of great positivity in the US. It was widely believed that a new era was dawning. This sent stock prices soaring, and the stock market grew stronger. This came to an end in October 1929, and was followed by a worldwide depression, which came to be known as the Great Depression. Economists still debate the causes of this big event.

The end of the First World War saw hyperinflation in Germany. The average German citizen lost trust in the politicians, leading to the rise of Adolf Hitler. Hitler dreamt of Germany dominating the whole world, and started the Second World War in 1939. Germany, Japan and Italy faced the Allies led by the UK and France. The US entered the war on the Allied side towards the end of that war.

By 1944, it was clear that the Allied forces would win the war. They gathered at Mount Washington Hotel, Bretton Woods, New Hampshire in the US, to design a new financial system for the world. Europe had been totally destroyed during the course of the war and even countries

like Britain and France were in a bad shape despite being on the winning side. European countries were in no position to negotiate. And so the American dollar was placed at the heart of the financial system that evolved at Bretton Woods.

The US was ready to convert dollars into gold at the rate of $35 for one ounce (31.1 grams) of gold. This came to be known as the Bretton Woods Agreement. It made the American dollar the premier international currency of choice, as it was the only currency that could be converted into gold.

This gave the dollar an exorbitant privilege. Other countries had to earn these dollars in order to pay for commodities like oil which were priced in dollars. The US could simply print all the dollars it needed. This is what it did to finance the long war in Vietnam, establishing military bases all around the world to check the rise of communism, in an era that came to be known as the Cold War.

The US ran an easy money policy, utilizing the exorbitant privilege of the dollar by simply printing it. This led to the collapse of the Bretton Woods Agreement in 1971. In late 1980s, it led to a stock market and a real estate bubble in Japan. Japan still struggles to overcome the effects of the bubbles bursting.

This was followed by stock market and real estate bubbles in South Korea and South-East Asia. Finally, it led to the dot-com bubble in the US in the mid-1990s, going on until early 2000 when it finally burst. During this period, the stock prices of companies which had business models built around the Internet, but which had no earnings, rose to astonishingly high levels.

The penultimate chapter of this book concludes with the wisdom of the legendary investor Warren Buffett. Doomed to be a failure during the heydays of the dot-com bubble when his investment company Berkshire Hathaway could not generate the stupendous returns that dot-com stocks tended to generate, he was, however, to have the last laugh. He was to write to his shareholders the famous lines, 'But a pin lies in wait for every bubble.' The lessons of the dot-com bubble bursting were never really learnt, and soon the same mistakes would be made again.

Large parts of the Western world and the US moved on from the dot-com bubble to a real estate bubble in the early years of the millennium. This finally led to the investment bank Lehman Brothers going bankrupt, kick-starting the financial crisis the world currently battles.

The third book in the *Easy Money* series will deal with how the evolution of money and the financial system ultimately led to the global financial crisis that started in late 2008.

1

'Coup De Whiskey'

It was 12.01 p.m. of 16 September 1920, a minute after noon bells tolled at Trinity Church in Wall Street, New York. Suddenly, there was a huge blast which spread green smoke everywhere. The windows of almost all buildings in the area were shattered. Hundreds of shrapnel-like iron slugs were scattered all over.[1]

Thirty people were killed in the blast and 300 injured, ten of whom were to die. Those who died belonged to the lower strata. Almost everybody who died belonged to the lower strata, the people who kept Wall Street up and running for big brokers and bankers as they cut their deals. Among those who died were bookkeepers, clerks, porters, messengers and stenographers, people who had stepped out for an early lunch. Wall Street was back up and running very soon. The next day, the New York Stock Exchange (NYSE) opened at its usual time, and during the first hour of trading, prices went up, accompanied by the heaviest volume of trading that had been seen in more than a month.[2] But the worst was yet to come.

***

Every bull market or bubble has its enduring myths and stories. Here is a story that has survived from the great bull market of the 1920s. Joseph Patrick 'Joe' Kennedy, father of John Fitzgerald Kennedy, is said to have survived the stock market crash of 1929 by getting out in time. He knew it was time to get out of the market when he received a stock tip from a shoeshine boy.[3]

After the blowout that hit the stock market in late October 1929, the

US government set up the Securities Exchange Commission (SEC) to monitor the stock market. The commission started operating in 1935 and Joe Kennedy was its chairman. Kennedy had made his fortune by reorganizing Hollywood studios. But he was not known for his probity and was not a 'family man'. There were allegations about Kennedy having made his money by bootlegging alcohol during the days of prohibition in the US.

In view of all of this, Kennedy was not the best choice for a regulator. His appointment to the post was seen more as a reward for financing Franklin Roosevelt's presidential campaign in 1932. When Roosevelt was asked why he had appointed Kennedy to keep a watch on the stock market, he is said to have replied, 'Takes one to catch one.'[4]

Talking of the 1930s before talking of the 1920s would be jumping the gun. The late 1920s was a time of sheer optimism in the US. The stock market had been on a bull run, touching highs it had never seen before. People became wealthy overnight. As the financier and stock market speculator Bernard Baruch is supposed to have said:

> Taxi drivers told you what to buy. The shoeshine boy could give you a summary of the day's financial news as he worked with rag and polish. An old beggar who regularly patrolled the street in front of my office now gave me tips and, I suppose, spent the money I and others gave him in the market. My cook had a brokerage account and followed the ticker closely.[5]

While Europe was in the dumps after the First World War, the US was progressing by leaps and bounds. From 1922 to 1929, the Gross National Product (GNP) grew at an annual rate of 4.7 per cent and unemployment was at 3.7 per cent.[6] The unemployment rate in Britain at the same time was 20 per cent.

The index of industrial production in the US that was 67 in 1921 increased to 100 by July 1928 and 126 by June 1929. The level of industrial activity in the country had nearly doubled over an eight-year period. Between 1926 and 1929, the number of automobiles produced in the country had risen by 25 per cent (nearly a million more).[7]

Such was the optimism of the time that people thought a new era of peace and prosperity was set to come. This feeling caught on after businesses saw quadrupled real earnings between 1921 and 1926.[8] The sentiment spilled into the stock market as well, and hi-tech companies of the future caught the eye of investors.

Some market favourites were stocks of General Motors (GM) and the

Radio Corporation of America (RCA). These companies employed new production methods that made it difficult to assess the fundamentals of the company.[9] RCA was founded in 1919 and was the purveyor of a new technology. Its sales were growing by 50 per cent every year. But unlike the high-dividend-paying GM, RCA had never paid dividends to its investors and would not pay one for many years to come. Investors bought the stock in the hope that the company would keep growing to pay huge dividends in the future. There were several other high-technology companies like Radio-Keith-Orpheum, the Aluminium Corporation of America and the United Aircraft and Transport Corporation, all of which did not pay dividends but caught the interest of the investors.[10]

But investor interest in these stocks took its time. In fact, in 1921, the stock market had been at its lowest since 1901.[11] As the earnings of companies started to increase, stock prices slowly began to rise. As we can see in Table 1.1, the Dow Jones Industrial Average (the premier American stock market index of that era) gave positive returns in four out of the five years between 1921 and 1925. In fact, stock prices rose by double or more between 1921 and 1925.

Stock prices and the dividends paid by stocks moved together between 1922 and 1927.[12] The stock market went wild in the latter half of 1927. Between July 1927 and 3 September 1929, the stock market rallied a whopping 127 per cent, as the Dow touched an all-time high of 381.17. In comparison, the stock market had given a more or less similar return of 129 per cent between 1921 and the end of June 1927, a period of six-and-a-half years. What had changed? Did the dividends given by companies go up, pushing prices up in return? Not really. The dividends continued to move smoothly in 1928 and 1929, but the stock prices just went through the roof.

Table 1.1 Returns on the Dow Jones Industrial Average

Year	Opening	Close	Return %
1921	72.67	81.10	11.60
1922	78.91	98.73	25.12
1923	98.77	95.52	–3.29
1924	95.65	120.51	25.99
1925	121.25	156.66	29.20
1926	158.54	157.20	–0.85
1927	155.16	202.40	30.45
1928	203.35	300.00	47.53
1929	307.01	248.48	–19.06
1930	244.2	164.58	–32.60

The short answer in the words of Benjamin Strong, the governor of the Federal Reserve Bank of New York, was that the market got a little *coup de whiskey.*

In April 1927, the Bank of England cut interest rates from 5 per cent to 4.5 per cent to help the moribund British economy. The lower interest rate led to the flight of gold worth $11 million over the next two months. The amount was not large, but it was a cause for concern. The Bank of France was trying to redeem the British pounds it had accumulated after the First World War for gold. In the normal course of things, the Bank of England would have raised the interest rates to protect its hoard of gold. But these were not normal times, with British exports having crashed and the unemployment rate in double digits. This led to the governor of the Bank of England, Montagu Norman, asking his old friend Benjamin Strong of the Federal Reserve of New York for help. Strong was always ready to help his friend and called a conference in July 1927. The conference was also attended by Dr Hjalmar Schacht, the president of the German Reichsbank, the central bank of Germany, and Charles Rist, the deputy governor of the Bank of France.[13]

In order to ease the pressure on the British from the French, Strong agreed to supply France with gold in exchange for the pounds they had accumulated. Countries were on a gold standard at that point of time, and paper money was exchangeable for gold.[14]

But this was just a small part of the overall deal. Between them, Norman and Strong also agreed to give a mighty inflationary push to the American economy with lower interest rates and dollops of easily

available credit. The idea was that with interest rates being lower in the US, the gold with the Bank of England would continue to stay in Britain. With more loans available at lower interest rates, people would borrow and spend more, which in turn would create some inflation in the US. This would raise the price of American products, in turn helping British exports which had become uncompetitive in the international market on the price front.

Strong explained this plan to Rist, telling him that he was going to give a 'a little *coup de whiskey* to the stock market'.[15]

'Coup de whiskey' translated into English means a cup of whiskey. But what the stock market got in the days to come was not just a cup of whiskey but truckloads of it.

What followed was the largest increase in bank reserves in the US. The Federal Reserve purchased government bonds worth $445 million from banks during the second half of 1927.

When the Federal Reserve bought these bonds, it paid in dollars. This money was added to the reserves of the banks. With greater reserves, banks could lend more. Over and above this, the Federal Bank of New York reduced its rate of interest from 4 per cent to 3.5 per cent, under the guise of helping farmers. It then influenced other Federal Reserve Banks across the US to follow suit.

***

Money, it is said, finds its way to the point of highest return. The Dow Jones Industrial Average had gone up around 7.1 per cent during the first six months of 1927. The year before, in 1926, the Dow had remained more or less flat, losing 0.85 per cent. But in each of the two years before 1926, it had generated returns of more than 25 per cent per annum. Corporate profits had quadrupled between 1921 and 1926. Other than this, the prevailing feeling was that the US was entering a new era of peace and prosperity.

It was Calvin Coolidge, president of the US at the time, who put this feeling into words. On 17 November 1927, he said that the US was 'entering upon a new era of prosperity'. The term 'new era' was born – a period that would mark the end of the old cycle of boom and bust – and this in turn would lead to continuously rising stock prices.[16]

Andrew Mellon, the treasury secretary of the US, had already assured the market and the investors in March 1927 that 'there is an abundant supply of easy money which should take care of any contingencies that might arise.'[17] Anybody and everybody looking to make money had to

be in the stock market, and this attracted many people looking to make a quick buck.

The British economist John Maynard Keynes later compared such a situation to newspaper beauty contests which were fairly popular during his time. This analogy is explained by John Allen Paulos in *A Mathematician Plays the Stock Market:*

> Keynes … likened the position of short-term investors in a stock market to that of readers in a newspaper beauty contest (popular in his day). The ostensible task of the readers is to pick the five prettiest out of, say, one hundred contestants, but their real job is more complicated. The reason is that the newspaper rewards them with small prizes only if they pick the five contestants that they think are most likely to be picked by the other readers, and other readers must try to do the same. They're not going to become enamoured of any of the contestants or otherwise give undue weight to their own taste. Rather they must, in Keynes' words, anticipate 'what average opinion expects the average opinion to be' (or, worse, anticipate what the average opinion expects the average opinion to be).[18]

The average opinion in the US at the time was that stock markets would go up. At the same time, investors discovered the beauty of margin trading, which allowed them to buy stocks without paying the entire cost of purchase up front.

Between 1 January 1928 and 1 October 1929, loans to brokers grew dramatically from $4.4 billion to $8.5 billion as more investors took to margin trading.[19] This was not surprising, given that reserves of banks had increased substantially, and for every dollar increase in reserves, banks could lend out more money.

The increase in loans to brokers was primarily because investors had discovered the beauty of margin trading. When an investor buys stocks, he typically pays the entire amount up front. Let us say an investor buys ten stocks worth $10 each. He would then pay $100 in all. If the stock goes up to $12, the investor's investment is now worth $120, and if he sells it, he makes $20, or a 20 per cent profit. In the case of margin trading, the investor does not pay the entire amount up front. He pays only a certain percentage of the entire amount initially. So if the margin is 10 per cent, and the investor is buying ten stocks worth $10 each, he needs to put only $10 up front (i.e., 10 per cent of the $100 he would have had to put otherwise). The remaining $90 is lent to him by his

stock broker. The stocks that are bought become the security, or collateral, against the $90 lent to the investor by the stock broker.

Now if this stock goes up to $12, the total investment is worth $120. The investor can sell these shares for $120. What would his earnings be in such a situation? First and foremost, he needs to return the $90 he had borrowed from his stock broker. The broker will also have to be paid a certain rate of interest on the amount that was borrowed. For the sake of simplicity, let us assume that the broker charges $1 on the amount lent as interest. The investor's profits would then be $19 ($120–$90–$10–$1).

In the first case, the investor makes $20, while in the second, he makes only $19. But in the first case, he had to invest $100 to make $20, while in the second, he had to invest only $10 to earn a similar amount of $19. The returns in the first case are 20 per cent, whereas the returns in the second are 190 per cent ($19 expressed as a percentage of $10).

Margin trading also allowed people to place bigger bets. Let us extend the example that we have considered here. The investor has $100 to spare. The margin is 10 per cent. The investor can now buy stocks worth $1,000 by borrowing the remaining $900 from his stockbroker. The example above was only for illustrative purposes. The typical margin on shares bought during that time was around 25 per cent, and as the boom progressed, it increased to 45–50 per cent.[20]

So the US discovered the power of margin trading. Investors bought stocks on margin with borrowed money and sold it as soon as the price went up by a few dollars. In this scenario, it did not matter what the prospects of the stock being bought were in the days to come. Would the revenue and profits of the company go up? Would this translate into higher dividends paid by the company? These were questions that did not really matter. What mattered was that money was available to be borrowed and invested in the stock market. And if the stock price kept increasing, even by a few dollars, there was money to be made and the party could go on forever.

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American banks were not allowed to invest in stocks. But the rallying stock market was too good an opportunity to miss out on. To get around this restriction, banks set up wholly owned affiliates which could enter into all kinds of investment banking and brokerage businesses. In fact, such was the lure that between 1922 and 1931, the number of such

firms went up from 10 to 114.[21]

These affiliates became big distributors of stocks and helped attract a lot of investors to the stock market. Banks had a larger and a better distribution system in place compared with stock brokerages, and this meant that they had a broader customer base to whom stocks could be sold. This is what they did and helped attract a lot of new investors with no prior experience in the stock market.[22]

Investors also came into the stock market through the investment trust, a new innovation that had hit American markets. The investment trust was a precursor to what is today called a mutual fund. It was essentially a collective investment scheme where money was collected from many investors and then invested in the stock market. The beauty of the arrangement was that even if the investor had a small amount to invest, he could have an exposure to a broad bouquet of stocks, which would not have been possible for him if he were investing directly in the stock market. Also, this was an opportunity for investors to let the expert fund managers on Wall Street manage their money for them.

Investment trusts invested the money they had collected in the stock market. But they also borrowed money. This, as we saw in the case of margin trading, helped spruce up overall returns and made the entire concept of an investment trust even more appealing to investors.

Investment trusts, like many ideas in finance, were a British invention. Before the 1920s, there were not many of them going around in US. By 1927, 160 investment trusts were in existence and 140 were formed during the course of that year; and 186 investment trusts were registered in 1928 alone. In 1929, 265 new investment trusts were formed. The $400 million raised by investment trusts in 1927 touched a whopping $3 billion in 1929.[23]

A person who invested in an investment trust was issued shares or units against this investment. If he wished to sell out, he could return these shares and the investment trust would sell a portion of the investments it held and use the money to redeem the investor.

The option of going back and redeeming the investment with the investment trust did not exist in a closed-ended investment trust. Instead, these investment trusts were listed on a stock exchange. When an investor wanted to exit, all he had to do was sell his shares of the investment trust on the stock exchange. Interestingly, the price at which he would be able to sell the shares on the stock exchange was different from the real price of the share. During the third quarter of 1929, the price of closed-ended investment trust shares on the stock exchange was 50 per cent more than their real price.[24]

Let us try and understand this through an example. Say an investment trust sold 1,000 shares at $10 each. This meant that a total of $10,000 would be collected. This money would then be invested in shares of companies listed on the stock exchange. Say the value of these shares went up by 50 per cent. This meant that the initial investment of $10,000 was now worth $15,000. Each share of the investment trust would be worth $15 ($15,000/1,000 shares). Even though this would be the real price of a single share of the investment trust, on the stock exchange the price would be 50 per cent higher, at $22.5.

This is bizarre. The only conclusion one can draw from this is that optimism was so high that Americans were willing to pay 50 per cent more than the real price of a closed-ended investment fund share. As economist John Kenneth Galbraith puts it in *The Great Crash 1929,* a book which chronicled the 1920s bull market in the US, there was a 'conviction that God intended the American middle class to be rich'.[25]

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Brokers lending on the margin had to borrow money from banks through the mechanism of the call money market. Most of the call loans (so called because they could be called back at any point of time) were contracted at the money desk of the New York Stock Exchange on Wall Street. It was the job of the money desk clerk to match the demand for these loans coming from the stock-brokers with the supply of these loans coming from the banks, as well as corporations which had idle money they were willing to lend for a short time period.[26]

Banks were overflowing with cash at this point, and call loans made to brokers went through the roof. This in turn led to an increase in broker loans to speculators. Between 1927 and 1928, these loans went up from $3.29 billion to $4.43 billion.

In response to this, the Federal Reserve Board started to raise interest rates, taking them from 3.5 per cent to 5 per cent in three increments.[27]

This was made possible because Benjamin Strong who ran the Federal Reserve Bank of New York with an iron hand was unwell. As a great friend of Montagu Norman, the governor of Bank of England, he had been keeping interest rates in the US low to help the UK. He had tuberculosis, so his lungs were failing him, and shingles had left him blind in one eye with only partial sight in the other. He sailed to Europe in May 1928 to recover, having made up his mind to quit his job. He died of severe haemorrhaging after a surgery in October 1928 on his return to New York.[28]

Freed from the clutches of Strong, the Federal Reserve Board also started selling government bonds to suck out excess liquidity it had created in the financial system, leading to lower bank reserves and in turn lesser lending to the stock market. At the beginning of 1928, the Federal Reserve held $616 million worth of government bonds, accumulated largely as a part of the easy money policy run by Benjamin Strong. The idea behind selling these bonds was that when banks and other financial institutions bought these bonds, they would pay in dollars and money supply would reduce. Banks began to give fewer loans to stockbrokers, in turn slowing down the stock market. By the end of the year, the government bonds held by the Federal Reserve were down to $150 million.[29]

This meant that the Federal Reserve had sold bonds worth $466 million ($616 million–$150 million), more or less equivalent to the $445 million it had bought during the second half of 1927 to increase the money supply in order to create inflation to help the UK.

This zeal to control the money supply had an impact on the call money market. Call loans to stockbrokers made by banks in New York started to fall. In fact, they had already peaked by the end of December 1927. After that, the Federal Reserve's tight money policy pushed up the interest rate to 8–9 per cent in 1928 and 12 per cent in 1929 in the call money market.

But this attracted more investors to the call money market. Foreign banks (which included the Bank of France which had a lot of reserves lying around) from Europe, private investors and corporations which had idle money lying around, were now lending in the call money market. Broker loans increased by another $1.5 billion during the second half of 1928.[30]

Stockbrokers could continue to borrow money but at higher interest rates. And with this the Federal Reserve's policy turned out to be a damp squib. At higher interest rates, it made sense for all kinds of other lenders to enter the call money market. As far as the investor who was buying stocks on the margin was concerned, he was hardly bothered. The optimism of the time was such that the American speculator was looking to double his money in one week. That being the case, paying an interest of 10–12 per cent a year on the money he borrowed for margin trading was not worth worrying about.

In fact, higher rates created a perfect arbitrage opportunity for banks in the Federal Reserve System. They could borrow from the Federal Reserve at the rate of 5 per cent and lend in the call money market at the rate of 12 per cent. In January 1929, the brokers' loans went up, and so

did the stock market. Brokers' loans went up by $260 million and the Dow Jones Industrial Average by another 3.4 per cent.

To curtail this, the Federal Reserve Board in Washington sent out a letter asking the twelve Federal Reserve Banks to ensure that they lent money only for genuine business purposes and not for fuelling speculation in the stock market. The Federal Reserve called it the policy of moral suasion, under which they were trying to direct credit towards a certain area while keeping it away from another. But as anyone who has handled money can tell you with confidence, it is difficult to keep money divided among various segments. It eventually makes its way towards the point of highest return.

This is precisely what happened. The Dow fell to a low of 295.85 on 16 February1929, a fall of 7.4 per cent after having started the month at 319.68. This was as a result of the Federal Reserve's policy of moral suasion. But the market recovered and closed the month at 317.41, almost where it had started, as money started coming back into the stock market.

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When asked once what he thought the market would do, the great John Pierpont Morgan replied, 'It will fluctuate.'[31] But Morgan's vagueness – or should we call it wisdom? – had clearly gone missing in the 1920s. It had been replaced by positive thinking which would turn out to be disastrous. Alfred P. Sloan Jr of General Motors said in January 1929: 'Personally, I believe that it is going to be a very prosperous year – I do not see how it could be otherwise.' Thomas Watson of the International Business Machines (now IBM) agreed with him when he said, 'We may look forward to the progress of business in 1929.'[32]

In fact, the market seemed to hold everyone in its grip. During the US Amateur Golf Championship held at Pebble Beach in California, a brokerage firm set up a temporary office in a tent so that the spectators, as well as the players, could follow their favourite stocks and buy or sell if they so wanted. Branch offices of stock brokerages were set up on select ocean liners as well.[33]

The stock mania caught on even with the Marx Brothers (Chico, Harpo, Groucho and Zeppo), the leading comedians of that era. Groucho was the most involved. The extent of the brothers' interest was such that in between shoots and plays, Groucho would slip off to his broker to execute trades.[34]

When businessmen and actors were so bullish, could politicians be

far behind? Calvin Coolidge, the president of the US during most of the bull run (from August 1923), felt that American prosperity was 'absolutely sound' and that stocks were 'cheap at current prices', even a few days before relinquishing office on 4 March 1929.[35]

This helped sustain the market through most of March. However, on 26 March 1929, interest rates on call loans touched 20 per cent. The Dow closed that day at 296.51, the lowest that month. It is said that the rally should have been over that day but that did not happen. Charles Mitchell, the top boss at National City Bank (precursor to what is today known as Citigroup), the largest bank in the US, came to the rescue. Banking was traditionally supposed to be a very boring business in which the bank raised money from depositors at a certain rate of interest and lent it at a higher rate of interest.

But Mitchell saw things a little differently. As John Brooks puts it in *Once in Golconda – A True Drama of Wall Street 1920–1938*: 'As he saw it, the principal business of his bank … was not lending or conserving money but peddling securities, common stocks included.'[36]

As mentioned earlier, the banks were not allowed to trade in securities, but almost every big bank got around this rule by forming a 100 per cent affiliate company, which could and did trade in securities. For example, National City Bank formed the National City Company which could do this. Mitchell maintained an army of salespeople who went out in the market to sell the financial securities that National City Company wanted to sell. For Mitchell, stocks and bonds were like any other fast-moving consumer goods, such as soaps, oil or even shoes. To motivate salespeople, contests with awards were organized.[37]

The National City Company had built this capability during the First World War. Between 1917 and 1919, the US government had issued bonds worth $21.5 billion. National City Company helped place a lot of these bonds by pioneering a retail sales approach and selling these bonds to the middle-class investor. It even had salesmen who went door to door selling these bonds.[38] By 1929, Mitchell's sales staff was busy convincing depositors with money lying around in their National City Bank accounts to invest in the stock market.[39]

Other than being the top boss at National City, Mitchell was also a director on the Board of the Federal Reserve Bank of New York, which, until the death of Benjamin Strong had been stronger than even the Federal Reserve Board in Washington. Mitchell's fixed salary was $25,000, but with his bonus included, he made almost a million dollars.

The million-dollar bonus that Mitchell took home depended on the performance of the companies he ran, which in turn depended on the

performance of the stock market. As long as the stock market kept going up, he could peddle stocks to unsuspecting investors through the National City Company.

So his personal well-being depended on how well the stock market was performing. On 26 March 1929, when the call money market interest rates touched 20 per cent, Mitchell stepped in and said that National City would lend money to prevent the sale of stocks. He also went on to say that National City would borrow money from the Federal Reserve Bank of New York, if required – something that the Federal Reserve Board in Washington had warned against in early February that year. Mitchell practised what he preached and put a total of $35 million in the call money market to ease interest rates.[40] Interestingly, this was not the last time a Wall Street denizen would misguide investors (knowingly, or even unknowingly, for that matter) to ensure that his fat personal pay packet remained unaffected.

Being the head of the largest bank in the country and a director at the Federal Reserve of New York, Mitchell's statement carried a lot of value in the market and by the end of the month, the Dow was up by 4.2 per cent to 308.8.

Over the next few months, a slew of statements from people in high positions came in to drive the market to higher levels. W.T. Foster, an investment banker at Goldman, Sachs and Co., warned in April 1929 that any attempts to restrict credit would lower the stock market and hurt business.[41]

Arthur Brisbane, a famous American journalist of the time, reproached the New York Federal Reserve's policy of moral suasion by saying, 'If buying and selling of stocks is wrong, the government should close the stock exchange. If not, the Federal Reserve should mind its own business.'[42]

This bout of positivity from leading public personalities kept the boom going. In the summer of 1929, Goldman, Sachs and Co. floated the Shenandoah Corporation, an investment trust. The money collected from this investment trust was used to buy the shares of another investment trust, the Goldman Sachs Trading Corporation. A few weeks later, Goldman Sachs floated another investment trust, the Blue Ridge Corporation. The money collected by selling the shares of the Blue Ridge Corporation was used to buy shares of the recently floated Shenandoah Corporation. The Blue Ridge Corporation owned 80 per cent of the Shenandoah Corporation. Hence, one investment trust was built on top of another investment trust.[43] This was nothing but a giant Ponzi scheme, in which money being brought in by a newer set of investors

(i.e., Blue Ridge) was being used to pay the older set of investors (i.e., Shenandoah). When an investor buys a stock, he is a part owner of a business. People who invested $250 million in these investment trusts (i.e., Blue Ridge and Shenandoah) did not own any real companies which were in the business of airlines or had factories or oil wells, for that matter. As a later-day observer said, it was 'nothing but a ticket in a lottery'.[44]

This bull market, like all others, had its set of naysayers. But with everybody busy getting rich, nobody had the time to listen. Paul Warburg, one of the most respected voices on Wall Street and a driving force behind the formation of the Federal Reserve of the US, was very pessimistic about the entire situation. In March 1929, he criticized the 'orgies of unrestrained speculation' and predicted that they would 'bring about a general depression involving the entire country'.[45]

The other big bear of the time was Alexander Dana Noyes, the financial editor of the *New York Times*, who constantly warned his readers 'against the prevalent illusion of perpetually rising prices and perpetually increasing prosperity'.[46]

And so the story continued. The stock market reached a peak of 381.17 on 3 September 1929. This is where the great bull run of the 1920s ended. The stock market fell by 3 per cent over the next two days. After the 3 per cent fall, Irving Fisher, the greatest American economist of that era, remarked, 'There may be a recession in stock prices, but not anything in the nature of a crash.'[47] The fact that 3 September1929 was the day that the bull market ended became obvious only in retrospect.

Six weeks later, on 17 October 1929, when the stock market had fallen more than 10 per cent from its peak on 3 September 1929, Fisher remarked, 'Stock prices have reached what looks like a permanently high plateau … I expect to see the stock market a good deal higher within a few months.'[48]

Irving Fisher's fortune was invested in the stock market. By 1929 he had built a fortune through a series of commercialized innovations (in economics and otherwise)that he managed to sell. His three-legged chair had met with modest success. He had made a financial score on a cylindrical index card system that he first marketed through his own company and later sold to Remington Rand.[49] The resulting fortune of $10 million was invested in the stock market. He would often trade at a margin of 10 per cent.[50]

Fisher had been investing in stocks as early as 1911, and by 1927, had become one of the most prominent promoters of the 'new era' theory. Unlike many economists, he was not all talk. He was borrowing

big time to buy stocks on the margin, also encouraging his son to do so.[51]

A self-styled economist and leading bear of the time, Roger Babson, had remarked (on 5 September1929) that 'sooner or later a crash is coming, and it may be terrific'.[52] The market climbed back up the next day, recovering more than half of the losses it had suffered over the previous two days.

Even though a sense of alarm did not set in, experts started to agree that some 'technical readjustment' (whatever that meant) was happening. At the same time, a few large traders started to gradually sell their investments. Between 3 September 1929 and 21 October 1929, the Dow fell by 15 per cent from its high of 381.17.

The week of 21 October 1929 set the shape of things to come. The Dow had closed at 320.91. By the end of the week, it was down 6.9 per cent to 298.97. The first two days of the next week (28 October and 29 October) saw the Dow fall by 23 per cent to 230.07 from its previous week's close. As the Dow fell between 3 September and 29 October, nearly $32 billion in investor wealth had gone up in thin air.[53] The losses kept piling up. By 13 November 1929, the stock market was down by a whopping 48 per cent to 198.69 from its high of 381.17 three months prior.

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As the stock market continued to fall, all votaries of margin trading realized that there was another side to it after all. Margin trading in good times could increase returns enormously. But bad times could amplify losses as well.

Let us understand this with an example. An investor has $100. The margin required is 10 per cent. So he buys ten shares of $100 each, putting in $100 of his own money and borrowing the remaining $900 from his broker.

So far, so good. Now let us say the value of the investment falls by 5 per cent. The stocks that were bought for $1,000 are now worth $950 or down by $50. The investor invests only $100 and borrows the remaining $900. The losses are adjusted against the amount invested by the investor, referred to as his equity. The amount invested by the investor is now worth $50 ($100–$50, which is the loss that has been incurred).

But the agreement calls for a margin of 10 per cent of the value of the stocks held, or, in this case, 10 per cent of $950, which works out to

$95. The equity in the investor's account is down to $50 already. This means that a margin call will be generated and the investor has to pay $45 to his broker ($95–$50). If he does not pay the required amount, the shares held as security against the investor's loan are to be sold in the stock market.

Now, what happens if the market continues to fall and drops 10 per cent in a day? In this case, the value of the investment is now worth $900. The investor's original contribution of $100 is totally wiped out.

If the investor invests $100 of his money, without borrowing, and the value of the investment falls 10 per cent, his investment is now worth $90. He has faced a loss of $10. But in the case of margin trading, a 10 per cent loss would have totally wiped the investor out.

The American investor, who had seen the beauty of margin trading as the value of his investments shot up, was now seeing the ugly side of it. Making matters worse, loans to brokers which formed the basis of all margin trading began to dry up. Banks had already been reducing exposure to loans to stock-brokers. But loans from other sources, like corporations with idle money, European central banks and private investors were available. These sets of investors made a mad scramble to get their money out of the call money market. Between 16 and 30 October, broker loans from others decreased by $1.4 billion, or 36 per cent. At the same time, out-of-town banks decreased their exposure to New York brokers by $805 million, or 44 per cent. In fact, during the last week of October the combined withdrawal made by others and banks outside New York exceeded $2 billion.[54]

This withdrawal of funds by bankers led to the saying that a banker is a fellow who lends you his umbrella when the sun is shining and wants it back as soon as it starts to rain. With sources of margin trading drying up, stocks held as collateral were dumped on to the market, adding to the fall.

Meanwhile, Irving Fisher, who had lost a personal fortune, continued to be optimistic. In the coming year, he continued to maintain that a genuine recovery was around the corner. He continued to believe in the 'new era' theory which he had helped spread. He felt that between two-thirds and three-fourths of the rise in the stock market between 1926 and 1929 had been due to fundamental reasons. The remaining growth, he felt, was because of the growth of broker loans.[55] He explained this a few years later when he said 'over-investment … over-speculation are … important; but they would have … less serious results were they not conducted on borrowed money'.[56] This is something the world is yet to come to understand.

So enthusiastic was Fisher about permanent prosperity in the 'new era' that other than betting his own money in the stock market, he also speculated using the wealth of his wife and sister-in-law. After the crash, he continued to be enthusiastic, despite the depression that followed. In a letter to this wife in early 1930s, he remarked, 'Now I am sure – as far as we ever can be sure of anything – that we are going to snap out of this depression fast. I am now one of the happiest men in the world.'[57]

But the fact of the matter was that Fisher had lost all of his $10 million in the stock market and lived off a series of loans amounting to $1 million from his sister-in-law that he would never repay. He died of cancer in 1948.[58]

Recent economic research has suggested Fisher might have been right. A paper written in 2004 found that a conservative estimate of the fundamental value of US corporations in 1929 was twenty-one times the corporate earnings. In comparison, a conservative estimate of the market value of US stocks in 1929 was no greater than nineteen times corporate earnings. In simple English, given the earnings of the US stocks at that point of time, they could have been priced even higher than they were. The research concludes that markets were undervalued rather than overvalued.[59]

But that is beside the point. The fact of the matter was that the stock market crashed and kept crashing. For a very brief period, some Wall Street bankers got together to buy stocks and create some sort of support for the market. John D. Rockefeller, a leading businessmen in the US, issued his first statement in several decades on 30 October 1929: 'Believing that the fundamental conditions of the country are sound … my son and I have, for some time, been purchasing sound common stocks.'[60] To this, Eddie Cantor, an actor who had lost a huge amount with the collapse of Goldman Sachs Trading Corporation, an investment trust set up by Goldman, Sachs and Co., retorted: 'Sure, who else had any money left?'[61]

The Dow hit a low of 41.22 on 8 July 1932, down by a whopping 89.2 per cent from its peak of 381.17. So huge was the massacre which followed that the Goldman Sachs Trading Corporation, an investment trust organized by Goldman, Sachs and Co., fell to a price of $1.75 a share. It had been issued at $104 per share.[62]

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There are generally two ways of making money in the stock market. One is the easy way of buying the stock and keeping it, in the hope that

it goes up. The other, of course, is borrowing the stock and selling it, in the hope that the price of the stock falls in the meantime, so that it can be bought back again at a lower price and a profit can be made. This method is referred to as short-selling.

Short-selling is difficult and risky, and attracts fewer people. In the first method, an investor's profit opportunities are limitless. Let us say that an investor buys a stock at $100. This stock can go up to any price, but it cannot fall below zero. This means that the loss is limited to the price at which the investor bought the stock, unless he is trading on the margin.

On the flip side, if an investor borrows stock and short-sells it at $100, he makes a profit as long as he is able to buy the stock at any price below $100. The price of a stock cannot fall below zero. The profit of an investor short-selling stock at $100 is limited to $100, or the price at which he buys the stock. If the stock price starts to go up, there are huge problems. There is really no upper limit at which the price of a stock can rally to. This means that in case of short-selling, profits are limited whereas the losses are not. A short-seller has to buy back what he has sold, because he has borrowed it and needs to return it. As the old saying goes, 'He that sells what isn't his/ Must buy it back or go to prison.'

The biggest short-seller of the era was Jessy Livermore who had made his money in the panic of 1907 by short-selling and then buying back shares at rock bottom prices. In fact, so fearful was his reputation that John Pierpont Morgan had to send emissaries and ask him to relent, which Livermore did. Newspapers had by then caught on to Livermore and how he made his money. 'The boy plunger makes millions,' ran the headlines, referring to his boyish appearance.[63]

Livermore's reputation had grown so much over the years that when markets fell, people thought he was selling short, and when they went up, people thought that he was buying. This was true, but not always. Over the years, he became an object of public enmity, and people began to ask how somebody could prosper through somebody else's misfortune. Livermore himself remained free of any guilt, believing that selling was a legitimate business activity. His logic was, if the market did not have sellers, what would investors buy?[64]

When the market had reached its low on 13 November 1929, Livermore was said to have made the bullish remark: 'To my mind, the situation should go no further.'[65] He was right and wrong at the same time. It was as bad as it could get for that year, but the years to follow would be worse. Livermore, deciding the bear market was not going

anywhere, switched sides and saved his fortune.

Some people were short-sellers with inside information. The best possible example of that period was Albert H. Wiggin, the top boss at Chase National Bank, the second largest bank in the country. He was not as well paid as Charles Mitchell at National City, but he made up for it in other ways.

Over the years, Wiggin had set up a series of 'personal holding companies' which allowed him to speculate anonymously on a series of stocks, including those of Chase National, the bank he ran. In July 1929, he figured out that the happy days of the stock market were about to come to an end and short-sold 42,000 shares of Chase National Bank. If ever there was a situation of conflict of interest, this was it. By the time he closed this transaction (by buying back the shares of Chase National) in November, he had already made a profit in excess of $4 million. Wiggins never admitted that short-selling the stock of Chase National was wrong.[66]

Deceit and fraud have been at the heart of almost every Wall Street boom and it is the top guys at Wall Street who are responsible for it. We shall see more of this in the pages to come. As Charles Kindleberger and Robert Aliber write in the all-time classic *Manias, Panics and Crashes*, 'The propensities to swindle and be swindled run parallel to the propensity to speculate during a boom.'[67]

2

The Great Depression

The economist Hyman Minsky offers an excellent explanation of what causes asset bubbles. Minsky grew up during the Great Depression which inspired his interest in economics. For most of his academic career, he was not a part of the mainstream establishment. He died in 1996 at the age of 79. But lately, he has been in favour, given that most of what he wrote and theorized has come true.

Minsky's basic proposition was that 'stability leads to instability'. When times are good, a greater appetite for risk means that banks are willing to extend riskier loans than usual. Businessmen and entrepreneurs want to expand their businesses, which leads to increased investment and corporate profits. This, in turn, leads to higher stock prices. But this does not happen overnight. As Minsky put it, when times are good and the economy is doing well, this 'leads to an expansion of debt financing – weak at first because of the memories of preceding financial difficulties'.[1]

Initially, banks only lend to businesses that are expected to generate enough cash to repay their loans. But as time progresses, the competition between lenders increases and caution is thrown to winds. Money is doled out left, right and centre. This is what happened during the bull run of the 1920s. Company profits went up during the first half of the decade, and this was reflected in double-digit returns of the stock market in four out of five years. As the boom happened, banks and others lent higher amounts in the call money market, which in turn lent money for stock market speculation.

Banks were willing to lend as long as the stock market kept rising. And the more banks were willing to lend, the higher the stock market

rose. This situation was akin to a Ponzi scheme which keeps running as long as the money being brought in by newer investors is greater than the money being withdrawn by existing investors. The moment the flow reverses, the scheme collapses. Similarly, as long as the banks and others were willing to lend, the markets kept rising; the moment that they decided they had had enough, the stock market collapsed.

Any expansion of credit cannot last forever. Something or the other creates doubts in the minds of lenders about all the dubious loans that have been extended, and they start calling loans back. Struggling to pay the money back, the 'shaky borrowers' are forced to sell their investment assets (or shares in this case). This in turn pushes the market down, sometimes causing a crash. In modern-day parlance, such a situation is referred to as a 'Minsky moment'.[2]

The crashing market 'is likely to lead to a collapse of asset values … a spiral of declining investments, declining profits, and declining asset prices', explained Minsky.[3]

That is exactly what happened after the stock market crash of 1929. A major factor that determined the stock price was the dividend paid by companies. This had not changed much by the time the market crashed.

The quarterly dividends of the stocks that formed the Dow had grown at 12.8 per cent during the quarter ending 30 September 1929. Even for the quarter ending 31 December 1929, the dividends grew by 11.6 per cent.[4] The stock market began to fall in September and dividend growth had not slowed down by then. Recent research by Harold Bierman shows that the price to earnings ratio of stocks, one way of determining if the stock market is overvalued, was reasonable then. Bierman says, 'The fact that we cannot predict stock prices turns with any reliability is an extremely important lesson … the balance between stock market optimism and pessimism is very delicate.'[5]

Investor sentiment towards the market changed after it had rallied for a while. Why did that happen? One of the conventional explanations blames the British speculator Clarence Hatry, whose empire suddenly collapsed on 19 September 1929, leaving investors with losses amounting to $70 million. Hatry, who even got the bottoms of his boots polished, bought United Steel Limited, one of the major British steel companies, for $40 million. His bank withdrew from financing the deal at the very last moment. He then began to try and raise money for the deal.

Hatry was unable to raise the money needed. In the end, he resorted to petty fraud and tried to borrow money against false collateral.[6] In early September 1929, rumours circulated that he was overextended.

The stock prices of his companies started to fall. On 18 September1929, he realized that his game was up and turned himself in to the authorities the next day.[7] On 20 September1929, the London Stock Exchange decided to suspend trading in all Hatry group shares.

This crisis stopped the flow of money from London to New York. When interest rates were raised in London, money started to flow out of New York.[8] British investors who had lost money because of the suspension of trading of Hatry shares started selling their stock investments in New York and simultaneously started withdrawing the money they had lent in the call money market in New York. When an investor loses money on an investment, he tries to recover that from his other investments. This led to British investors selling out of the US. Between 20 September 1929 and the end of the month, the Dow fell 7 per cent.

After British investors started to withdraw money from the call money market, there was a mad scramble to withdraw money from the call money market in New York by other investors (corporate and private investors) and banks from outside New York. With call loans recalled, investors who had bought shares on a margin had to sell all at once to repay these loans. This led to sustained selling by investors through the last week of October 1929, after which the market crashed.

Pretty soon, the American economy broke down as well, slipping into what is now known as the Great Depression. Between 1929 and 1933, the real Gross Domestic Product (GDP) of the US fell by over 25 per cent. Unemployment grew to 25 per cent.[9] About thirteen million people became jobless. Meanwhile, during the month of July 1932, the Dow fell to 41.22.[10]

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All of this begs this question: Did the stock market crash cause the Great Depression or did the Great Depression lead to the stock market falling from its peak by 90 per cent? As W.W. Kiplinger said, 'The amazing lesson from this depression is that no one knows much about the real causes and effects of anything.'[11] Conventional economic thinking looks for generalizable causes which explain the world as it is, while imparting lessons for the future. But that does not always work. Mark Buchanan, a physicist and a science writer, has an interesting perspective on this. He gives the example of a fire that burns a house down. Later, it is discovered that someone was playing with matches. As luck would have it, a lit match landed on a scattered deck of playing cards, which were

scattered in a way that they stretched out to a curtain. The cards caught fire, fanning out to the curtains, ultimately burning the whole house down.

The conclusion from this incident would be that the house was burnt down primarily because the cards that were scattered in a certain way caught fire. If they had not been scattered in that particular way, the chances are that the house would not have burnt down. And yet, we cannot generalize this. As Buchanan puts it, 'It's not the case that keeping cards from being scattered about in a particular pattern will reduce house fires.'[12]

Something similar may have happened as the Great Depression intensified. The stock market crash of 1929 led to one thing after another. As the stock market kept falling, the depression was born and began to spread. As it spread, the stock market fell more swiftly. The causality worked both ways.

One of the first things that happened after the crash was that New York bankers tried to halt the declining stock market. In so doing, they reduced loans to commodity dealers and automobile instalment companies. Back then, many commodities were shipped to New York on consignment and sold only on arrival. This meant that if commodity dealers operating in New York were unable to borrow, they could not buy commodities. With no credit available to the commodity dealers, the prices of commodities such as coffee, rubber, hides, silk and tin, which depended on loans being available in New York, started to collapse.[13]

As Charles Kindleberger, the greatest economic historian of the twentieth century, said, 'This spread the financial crisis to the commodity markets … the waves rippled around the world.'[14]

'If the price of a commodity falls, it falls everywhere,' he explained.[15]

The fall of the stock market would not have hurt a substantial portion of the American population economically since the number of speculators in the stock market was at best only around a million.[16] The population of the US at that point in time was around 120 million.[17] The fall in commodity prices started to hurt the population at large. Nearly one in four Americans depended on agriculture, even though the figure had fallen from 33 per cent in 1910, when nearly one in three Americans had depended on agriculture for their living.[18] This led to a decrease in purchasing power for this section of the population, and for those who had already lost a lot of money in the stock market.

With the negative effects of the stock market spreading to the commodity market, the purchasing power of the American citizen was badly hit. This led to a situation where people wanted to save their

money rather than spend it.

Conventional economic thinking of the time drew upon Say's law (attributed to the French economist and businessman Jean-Baptiste Say). The law states that the production of goods ensures that workers and suppliers of these goods are paid enough for them to be able to buy all the other goods that are being produced. A pithier version of this law is, 'Supply creates its own demand.' But what if consumers decide to save more? The theory foresaw this as well. If consumers decided to save more, the money would land up in banks. Banks would suddenly have more money, leading to lower interest rates. Lower interest rates would mean that businesses could borrow and invest more. This would lead to a situation where consumers would have more money in their pockets to spend.[19]

Come what may, people would have enough money to spend at any point of time. A huge contraction in the economy or a depression was not possible according to Say's law. Only mild recessions could occur. As John Kenneth Galbraith wrote in *A History of Economics – The Past as the Present*, 'There could not be a remedy for a depression, if depression had been ruled out by the theory. Physicians, even of the highest repute, do not have a treatment for an illness that cannot exist.'[20]

This kind of economic thought linked savings and investments, with the simple connection that when consumers would save more, businesses would invest more, leading to higher incomes for everyone and greater purchasing power for the overall economy. The logic of this argument drew its strength from an idea in physics where equilibrium is the natural state of things. According to Benoit Mandelbrot, a maverick mathematician who often dabbled in economics, most economic theory is just altered physics.[21]This being the case, it is no surprise that economic theory and practice are two different things.

Say's law was to be put to the test by John Maynard Keynes. Keynes had invested in a wide array of assets, including commodities and stocks in the 1920s, and his personal fortune had suffered badly in the aftermath of the crash.[22]

But even as his personal fortune took a big hit, Keynes was at his intellectual peak. He explained the situation prevailing at the time of the Great Depression using the 'paradox of thrift'. When stock prices and commodity prices fell, a certain section of the population started to cut back on its expenditure. If a single person cuts back on his expenditure, it makes tremendous sense. But if a significant section of the population cuts back, there is a problem, the logic being that one person's spending is another person's income.

If a substantial section of the population increases their savings and cuts their spending, the income of another section of the population is impacted. This section could include big businessmen or even the corner store down the road.

During the Great Depression, as people spent lesser, businesses saw a drop in revenues. This meant two things. One, that businesses had to fire people to stay competitive. An increase in unemployment would lead to a further cut in spending. Unemployed people would obviously spend less, as would others in the fear that they might become unemployed as well in the future. The other thing businesses were likely to resort to in such a situation was price cuts, in the hope that lower prices might attract consumers to buy more. But lower prices are not always the best way to attract consumers, because they create an expectation of further price drops, and hence, there is a tendency to postpone consumption. And that is precisely what happened.

As John Cassidy of the *New Yorker* magazine writes in *How Markets Fail – The Logic of Economic Calamities,* 'Keynes was pointing out that market economies are subject to positive feedback: downturns have a tendency to feed on themselves and get amplified, with the level of spending spiralling down.'[23]

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When the stock market crashed in the months of October and November in 1929, Herbert Hoover was the president of the US. Hoover swung into action very quickly, trying to implement his pet theory. He believed that high wages were an important cause of American prosperity. This notion had taken hold in the country since the turn of the century when the US had very rapidly industrialized.

People like Henry Ford also contributed to the belief in this notion. In January 1914, Ford doubled the wages of his workers to $5 a day. This was in response to low worker morale and a very high turnover on the production line. It worked wonders: Ford Motors produced 15 per cent more cars with a 14 per cent drop in the number of workers.[24]

This led to the theory that high wages were responsible for greater productivity. While this might have been true in a few cases, higher wages are generally a result of greater productivity and capital investment and not vice versa. But living in the times that he did, Herbert Hoover believed the opposite to be true.

As economist Murray Rothbard puts it in *America's Great Depression*, 'This theory put the cart before the horse by claiming that

high wage rates were the cause of high productivity and living standards. It followed, of course, that wage rates should be maintained, or even raised, to stave off any threatening depression.'[25]

On 21 November 1929, Hoover organized a White House conference which was attended by the biggest American businessmen of that time. This included Henry Ford, Alfred P. Sloan Jr, Pierre DuPont and Matthew Sloan. Hoover was of the opinion that a long depression might happen, given that the number of unemployed had already reached two to three million. Therefore, businessmen should maintain the wages they paid their workers. The axe of the depression must first fall on the profits that businesses made and not on the workers' salaries. The industrialists who attended the conference promised not to cut wages and appealed to other businessmen to do the same. Henry Ford even announced an increase in wages for his workers.[26]

Even when wholesale prices fell 10 per cent in 1930 and 15 per cent in 1931, wages were maintained. As one observer put it, 'They [the businessmen] intend to keep up wage levels even if they have to close down their mills.' As prices fell, the revenue earned by businesses also came down. This, in turn, brought down profits, given that wage costs were not adjusted adequately. Business profits were almost wiped out by 1932. Aggregate profits were negative in 1933. By the time Hoover was ready to leave office in March 1933, the index of industrial production had fallen by more than half, to 54 from 114 in August 1929.[27]

Even though wage rates were maintained, the actual number of hours of work was reduced. The number of hours worked fell from forty-eight a week in 1929 to thirty-two a week in 1932. The reduction in working hours was carried out to ensure that businesses did not collapse. Even with the same wage rates, actual incomes of workers fell by more than 30 per cent. But the unemployed were the worst hit. By 1933, one in every four American workers was unemployed. In some industries, the rate of unemployment was as high as 47 per cent.[28]

The wage agreement that Hoover extracted from leading American businessmen in November 1929 did the country more harm than good. With a major cost not under the control of businessmen, there was no question of running a business at a profit.

Hoover also tried to do his bit for the falling prices of commodities. In June 1929, he had formed the Federal Farm Board. It was given $500 million by the American government and was allowed to extend low interest rate on loans of up to twenty years to farm cooperatives. The crisis of the stock market had spread to the commodity market very quickly as New York commodity brokers were denied credit. The

Federal Farm Board stepped in on 26 October 1929, deciding to lend up to $150 million to wheat cooperatives to try and stabilize wheat prices by keeping wheat off the market. This move maintained wheat prices for some time, causing American farmers to plant more wheat in 1930. With more wheat being produced, more wheat had to be held off from the market to maintain prices. This meant that America lost its share in the global wheat market. Argentina and Russia increased their production and this drove prices down further. On 30 June 1930, sixty-five million bushels of wheat had been held off the market. As the price of wheat continued to fall, stocks of wheat piled up in America. By mid-1931, nearly 200 million bushels of wheat had been taken off the market. Finally, the US decided to sell all the accumulated wheat in the global market, causing wheat prices to crash and leading to losses of $300 million. Around eight-five million bushels of wheat were given away for free to the Red Cross.[29]

The government similarly tried to support cotton prices by asking farmers to reduce their acreage. It also tried to buy cotton to keep it off the market.[30] The result was that the US lost foreign markets while encouraging cotton production all over the world, hurting American cotton growers permanently.[31]

Similar measures were tried with butter, grapes, wool, tobacco and other commodities, with most efforts failing and leading to a further lowering of prices. In his second annual message to the nation on 2 December 1930, Hoover admitted that farm prices were 20 per cent lower than they were in 1928, despite all the attempts made by the government. However, prices in the US were higher than those in other countries. Wheat prices were 50 per cent higher than prices in Canada, and wool prices were 80 per cent higher than prices in Denmark. With prices higher in the US, it made sense for any smart operator to buy from outside the US.[32]

The Tariff Act of 1930 (better known as the Smoot–Hawley Act after Senator Reed Smoot and Representative Willis C. Hawley, who sponsored it) was passed on 17 June 1930 to deal with this situation. This provision raised tariffs on 20,000 industrial and agricultural goods to record levels.[33]

The clamping down on imports from other countries in the US was likely to lead to a wave of regulation around the world, as other countries would also clamp down on imports to protect their own markets. And so, quite rightly, there were protests against this. Thomas Lament, a partner at J.P. Morgan, pleaded with the president to veto the Tariff Act. ‘I almost went down on my knees to beg Herbert Hoover to

veto the asinine Hawley-Smoot Tariff,' he later said.[34]

A group of 1,028 economists also asked the president not to proceed with the bill. Irving Fisher was party to this petition. He argued that if countries that owed the US money (as debt after the First World War) were not allowed to sell goods to the country, they would never be able to repay their debts. But Hoover had a mind of his own and went ahead regardless.

In response to the Tariff Act, a wave of protectionism sprung up all over the world. It closed world markets to American farmers and led to a further fall in the prices of agricultural commodities, hurting the US and other countries in the process.

Take the case of rubber. Britain, which more or less had a monopoly over rubber, restricted its exports, hoping to push up the price of rubber. This did not go down well with the US, which was the number one consumer of British rubber. But given that the US had shown great protectionist tendencies, there was not much it could do about the situation. But the scheme hurt the British badly. With the British restriction on exports of rubber, other countries expanded their production of rubber (especially the Dutch) and captured the market. This left the British worse off than where they began.[35] What the British experienced with rubber was similar to the experience of wheat and cotton by the US.

Meanwhile, commodity prices kept falling. Between 1929 and 1931, the price of a bushel of wheat fell from $1.03 to 36 cents. The price of hogs fell from $11.36 to $6.14 per head during the same period. In fact, the purchasing power of farm commodities in the summer of 1932 was a third of what it was in 1914.[36] Corn was selling at less than 10 cents a bushel and pork had fallen to 3 cents a pound.[37]

What had not changed was the heavy and unchanging burden of debt. In the states of Iowa, North Dakota and South Dakota, nearly 6 per cent of farms were sold because farmers went bankrupt and faced foreclosures on loans they had taken. In 1933 this went up to 8 per cent.[38]

The continuing fall in the prices of commodities led to 3,000 farmers meeting on 3 May 1932 in the state of Iowa to form a bloc.[39] They called for a farm strike on 4 July 1932, which was Independence Day in the US. Their slogan was, 'Stay at Home – Buy Nothing, Sell Nothing.' They even had a song:

'Let's call a farmers' holiday,
a holiday let's hold,

We'll eat our wheat
and ham and eggs
And let them eat their gold.'[40]

Interestingly, this was a threat to return to the barter economy of old and was supposed to last a month. The movement soon spread to other states. It peaked in 1933 after which it began to weaken, though it managed to last until the presidential election in November 1936.[41] The leader of the movement, Milo Reno, expressed surprise at people going bankrupt in the richest nation of the world.[42]

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The elections for the thirty-seventh president of the US took place in November 1932, with Franklin D. Roosevelt from the Democratic Party against Herbert Hoover of the Republican Party. The Dow Jones had touched an all-time low of 41.22 in July 1932, but stock prices had more than doubled by November 1932 and the Dow was at 84 points. This was the fastest ever that American stock markets had shot up.

While people had the enthusiasm and money to invest in stocks in 1929, there was nothing left to invest by 1932.[43] As is often the case with bear market rallies, this one also fizzled out quickly, and by 30 December1932, the Dow had fallen by 25 per cent and was quoting at 60.26.

The brief stock market rally notwithstanding, things had gone from bad to worse in 1932. Unemployment had increased from 1.6 million to 12.1 million between 1929 and 1932. But the worst affected were the wholesale prices of farm products, which had fallen by more than half. And wholesale prices of non-farm products had gone down by nearly 25 per cent.[44] Due to an increasingly protectionist environment all over the world, exports fell from $5.2 billion in 1929 to $0.17 billion in 1933.[45]

In this depressing scenario, Roosevelt's campaign song was *'Happy days are here again'*. And happy days did come for Roosevelt; he won a landslide victory over Hoover, garnering 472 electoral votes against Hoover's fifty-nine.

A crisis was already at hand by the time Roosevelt took office on 4 March 1933, thirty-two days after Adolf Hitler had taken over as the Chancellor of Germany. The US was reeling under a series of bank failures. During the 1920s, around 700 banks had failed on an average in a year, with deposits amounting to around $170 million.[46] A major reason for this was the fact that many states did not allow branch banking on the pretext that it was 'un-American'. Small banks were

expensive to run and people running these banks often did not have the required expertise.[47]

During 1929, 659 banks failed, several after the stock market had crashed in late October.[48] The next year, the number of banks failing more than doubled to 1,350, with deposits of $837 million. In 1931, this number went up further to 2,293 banks with deposits of $1.69 billion. During 1932, 1,453 banks failed with $706 million in deposits.[49]

As the prices of commodities like cotton, lumber, tobacco and wheat fell and farm exports collapsed, many American farmers defaulted on their loans, leading to runs on small rural banks during the early years of the depression.[50]

When banks failed, the savings of depositors were stuck till these banks could open again or the bankruptcies could be resolved.[51] With no access to their savings, depositors cut down on their spending in order to rebuild savings. This lack of spending contributed to the depression. On the other hand, failed banks could no longer lend money, and this impacted the business activity in the country. It also discouraged other banks that were sound from extending loans. As Rothbard puts it in *America's Great Depression*, 'This enormous increase in bank failures was enough to give any bank pause – particularly when the bankers knew in their hearts that no bank can ever withstand a determined run.'[52]

Excess reserves in banks grew from $42 million in October 1929 to $584 million in January 1933, a fourteen-fold increase. This was when the number of banks in the country had fallen.[53] Even banks that were in good shape were not willing to lend, preparing for a big bank run to hit them. They wanted to ensure that they had enough deposits to face a run.

The banking system had evolved as a fractional reserve banking system, in which banks kept only a minuscule portion of their deposits as reserves. If more than a certain number of depositors turned up at the doors of the bank wanting their money back, even the best of banks could fail. There was no way that they could service these depositors, because their money had been lent to others.

Calling back loans in a short span of time is not always possible. And when banks do call back loans during a run, economic activity goes down. In order to repay the bank, borrowers typically withdraw their money from value-adding economic activities.

In September 1931, Great Britain discontinued the gold standard. This left central banks and people with a great number of pounds which could not be converted into gold. The fear now was that the US would

follow suit. During the period of five weeks after Great Britain went off the gold standard, Europeans converted $750 million into gold. This outflow did not come at a good time for the US, where banks were already under serious pressure from their depositors. Within a month of Great Britain going off the gold standard, 522 American banks had failed.[54]

The crisis soon spread to cities like Philadelphia and Chicago. Chicago saw a cluster of twenty-six bank failures between 20 and 27 June 1932.[55]

The *Commercial and Financial Chronicle*, a leading business and finance daily of the time, provides a detailed account of the run on Chicago's banks. Its reports tell of how even healthy banks experienced runs with long lines of depositors waiting to clean out their accounts.[56]

With this, the news of bank runs spread across the length and breadth of the country. Francis Gloyd Awalt, the Comptroller of Currency, felt: 'The straw that broke the camel's back had come from Detroit, Michigan.' [57]

Banks in Detroit had been having a tough time since 1930. Over a period of about two-and-a-half years, till 11 February 1933, nearly $250 million had been withdrawn from the First National Bank of Detroit. Large amounts of money had also been withdrawn from the Guardian Trust Company and the Guardian National Bank. In order to deal with these withdrawals, the First National Bank had practically sold off all its liquid and unpledged assets. The Guardian Trust Company, on the other hand, borrowed money from Henry Ford and his interests.[58] The run continued unabated in Detroit for a while, and by January 1933, banks were losing $2.5–3 million each week. The only way for banks to continue honouring their deposits was to borrow more money.[59]

The Guardian Trust Company attempted to borrow some money from the Reconstruction Finance Corporation, which had been set up in 1932 to help banks and businesses in trouble. For this to be possible, some portion of the loan given by the Ford interests to the Guardian Trust Company would have to be subordinated to the new loan from the Reconstruction Finance Corporation. This meant that in case the Guardian Trust Company went bankrupt, the loan taken from the Reconstruction Finance Corporation would be repaid first. Only after that would the Guardian Trust Company consider repaying the loans from the Ford interests.

It was going to be difficult to convince Henry Ford of such an arrangement. So, Hoover (who was still the president after losing the

election, since Roosevelt would only take over in March 1933) arranged a meeting between Henry Ford and Arthur A. Ballantine, the under secretary of treasury, and Roy D. Chapin, the secretary of commerce. Edsel Ford, the son of Henry Ford and president of the Ford Motor Company, was also present at the meeting, which was held on 13 February 1933, a banking holiday.[60] Henry Ford refused to let his loans be subordinated. In fact, he even threatened to withdraw the $25 million he had in deposits at the First National Bank of Detroit as soon as the banks opened the next day. He also had $7.5 million and $17.5 million in deposits in the Guardian Trust Company and the Guardian National Bank. If Ford had carried out this threat, the entire banking system in Detroit would have come to a standstill. To prevent Ford from withdrawing any money, William A. Comstock, governor of the state of Michigan, declared a banking holiday starting 14 February 1933, and shut down all banks in the state. This banking holiday that was meant to last eight days went on for a while.[61]

The shutting down of all banks in the state confirmed the worst fears of Americans that all banks were unsafe, triggering a nationwide bank run. People felt it was safer to keep their hard-earned money under their mattresses than in banks. By 3 March 1933, bank holidays had been declared in thirty-two out of forty-eight states, leaving most of America unbanked.[62]

By the time Franklin Roosevelt took over as president on 4 March 1933, the banking system of the US was in a mess and something needed to be done quickly. Roosevelt did what the states were already doing and extended the banking holiday to the national level on 5 March 1933, the day after taking office.

While the holiday was originally supposed to last till 9 March 1933, it was extended till 12 March 1933. On 12 March, Roosevelt broadcast the first of his famous fireside chats on radio to the public. He said that only the safe banks would be opened from the next day. At the same time, he assured them that it was safe to keep their money in banks, rather than under their mattresses. The message reached the public, and nearly half the money that had left bank vaults returned to them.[63]

What is interesting is the impact of Roosevelt's fireside chat on the people of the country. It is safe to say that most people knew it would be difficult for the government to distinguish between the safe banks and the unsafe ones within such a short period of time. But the unstated message of Roosevelt's reassurances was that the public would be protected against all losses, and the government would take care of the banks in the country.

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Although Roosevelt's fireside speech saved the American banking system from collapsing, he soon realized that more concrete measures were needed to discourage bank runs.

This is when the idea of deposit insurance was introduced. This would essentially insure people's bank deposits, so that even if banks went bust, the deposit holders would get their money back. A scheme like this had never been introduced anywhere in the world before. As per the original provisions under the Banking Act of 1933, deposits were to be insured (a) up to $10,000 in full, (b) 75 per cent of the next $40,000, and (c) 50 per cent of the amount over $50,000. The Federal Deposit Insurance Corporation (FDIC) was set up to execute this plan.[64]

The plan was later modified by the Banking Act of 1935 and only deposits of up to $5,000 were fully insured. Also, the insured bank had to pay an insurance premium to FDIC, amounting to a twelfth of every dollar of total deposits. This premium was to be paid in two instalments during the course of the year. The scheme would cover almost 98 per cent of all depositors.[65]

This plan did not go down well with bankers and several objections were raised. The first objection was that the basic principle of insurance was not being followed: the premium amount is a function of the riskiness of the object being insured. In this case, the insurance premium was linked to the size of the bank, rather than to how well or badly managed it was. The American experience had been the complete opposite. Small rural banks were more likely to fail than bigger banks. Bigger banks had numerous accounts with amounts greater than $5,000 in them whereas rural banks had very few such accounts.[66] Big banks were being penalized for their size, while small banks were being subsidized under the scheme.

This could have led to a situation where a bank could drop its credit standards and lend to people it normally would not have lent to, in order to attract more business. If the risk the banker was taking on by lending to those with poor credit paid off, he got to keep the profits. If it did not, the bank was likely to go bankrupt, and the deposit insurance fund created from the contributions of more cautious rivals would come to the bank's rescue.[67] A bank following a risky strategy would not be penalized with a higher premium. At the same time, a bank following a cautious and credible lending policy would lose out on business.[68]

The third argument raised against this scheme was that since deposits were now being insured, depositors would not keep track of the quality

of bank management and the overall riskiness of the bank.[69]

But neither the people nor the politicians were willing to listen to the bankers. A popular cartoon of the era (that won the Pulitzer Prize) depicted a squirrel asking a victim of a bank failure why he did not save money during the good times. The victim replies, 'I did.'[70]

The prevailing sentiment was that bankers had diverted money from regular business to speculation in the stock market, hurting the depositor, who had been saving his hard-earned money in banks.

And so nobody listened to the bankers, even though their arguments were valid. People might have paid heed at another time. The idea of loss to deposit holders being plain injustice had a powerful simplicity, which bankers could not compete with. It was argued that the price to be paid for the general security of the financial system was that larger, stronger banks would subsidize weaker and smaller ones.

The government was also trying to rekindle the confidence of banks and bankers, so that they would start lending money again. In fact, the deposit insurance scheme was a huge success even among the banks that were not members of the Federal Reserve System. Within one month of the scheme being launched, nearly 7,500 state banks had joined the system.[71]

In the years to come, the concept of deposit insurance caught on with other countries and institutions all over the world.

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Several other developments followed after this, changing the nature of American banking as it had been. The Banking Act of 1933 (better known as the Glass-Steagall Act) banned commercial banks from underwriting, holding or dealing in corporate securities directly or indirectly.[72]

As we saw earlier, banks had put the affiliate route to great use between 1920 and 1929 to divert their funds into the stock market. Banks were given a year after the passage of the Banking Act of 1933 to separate themselves absolutely from their affiliates.[73]

The Glass-Steagall Act was passed on 16 June1933. But by then, nobody in the financial system was willing to take any risk anyway. As James Grant, the editor of *Grant's Interest Rate Observer* (one of the foremost investment newsletters in the world at the moment) puts it in *Mr Market Miscalculates – The Bubble Years and Beyond:*

> Not the least ironic feature of Glass-Steagall was its impeccably bad timing. On the date of its signing, 16 June 1933, a little less

than four years had elapsed since the 1929 stock market peak; margin debt had almost disappeared. Almost all terrible things that were going to happen had happened.[74]

The Glass-Steagall Act stayed around for the next sixty-six years. One of its provisions, which did not allow commercial banks in the investment banking space, was repealed only in November 1999, with the passage of the Gramm-Leach-Bliley Act (GLB), also known as the Financial Services Modernization Act of 1999. This was when the US was in the midst of another bull run and the government wanted to promote what Grant called 'enlightened risk taking'.[75]

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Franklin Roosevelt had another headache when he took over as president of the country: falling commodity prices. The index of wholesale farm commodities stood at about 40 per cent of the level at 1926. Even though farmers were able to sell almost all of what they were able to produce, the prices they received were not sufficient to meet their loan obligations. Because of this, they were dispossessed of their farms.[76] Banks then sold these farms to recover whatever they could.

Roosevelt held the view that initiating a rise in prices was key to galvanizing the moribund economy. Others were of the view that a fall in the level of economic activity had led to lower prices, and hence, the president had got the causation wrong.[77]

But economics is not physics. The truth lies somewhere in between. Initially, the crashing stock market had pushed the consumption of goods down, in turn leading to lower economic activity and falling prices. But after a while, falling prices were also responsible for the lower economic activity. Both the cause and the effect had intermingled.

The view of the general public, particularly the farmers, was more in line with Roosevelt. They believed that a rise in prices was important to improve business conditions. Roosevelt realized this and knew that increasing prices was a good thing to do, at least politically.[78]

One way in which inflation could be created was by printing and pumping more paper money into the market. But this was something Roosevelt was not comfortable with. Historically, governments resorting to this method for creating inflation had been seen as reckless.

The problem was that even if Roosevelt had chosen this path, the US was still on the gold standard. The government was obligated to give as much gold as a person demanded, at the exchange rate of $20.67 per ounce. In such a situation, if people learnt that the government was

stoking inflation, they would rush to convert their paper money into gold as soon as possible.[79]

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One month after taking over as president, Roosevelt issued Executive Order 6102, on 5 April 1933. This was probably the most bizarre order to have ever come from the White House. It read:

> I, Franklin D. Roosevelt, president of the United States of America … do hereby prohibit the hoarding of gold coin, gold bullion, and gold certificates within the continental United States by individuals, partnerships, associations and corporations … All persons are hereby required to deliver on or before May 1, 1933, to a Federal Reserve Bank or a branch or agency thereof or to any member bank of the Federal Reserve System, all gold coin, gold bullion and gold certificates now owned by them or coming into their ownership on or before April 28, 1933… Whoever wilfully violates any provision of this Executive Order… may be fined not more than $10,000, or…may be imprisoned for not more than ten years, or both.[80]

This order called for all private gold in the US to be handed over to the Federal Reserve System on or before 1 May 1933. Very little private gold, in the form of gold coins not amounting to more than $100 and gold coins having a recognized special value to collectors of rare and unusual coins, could be retained. Some exceptions were made for people like dentists and jewellers who made 'legitimate and customary' use of gold in their respective professions.

The gold so brought to the government would be exchanged for paper money or other coins at the prevailing rate of $20.67 per ounce.

Two weeks after Roosevelt had asked Americans to hand over their gold to the government, the gold standard was formally abandoned through a presidential proclamation on 20 April 1933. Along with this, the export of gold was prohibited.

These moves marked the end of the 'true' gold standard in the US. The power people had to exchange paper money for gold during times of inflationary government policies or even otherwise was taken away. An estimated 190 million ounces of gold was exchanged for money by American citizens.[81] As he had done when he closed down the banking system in the US, Roosevelt spoke directly to the people and explained his reasons for doing what he was doing. During the fireside chat on 7

May 1933, he told the people of the country that if Americans kept buying gold, there soon would be none left. In the interest of fairness, he had to ensure that he denied gold to everyone.[82]

There was no sense to this logic. But Roosevelt's deeper intentions would soon become clear. With the dollar no longer on the gold standard, it fell in value against other foreign currencies, which were on the gold standard and exchangeable for gold. This fall in the value of the dollar against other currencies made American exports more competitive.

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John Maynard Keynes published his magnum opus *The General Theory of Employment, Interest and Money* in 1936. A paragraph from the book reads:

> The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed, the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influence, are usually the slaves of some defunct economist.[83]

The same was happening to Franklin D. Roosevelt. Roosevelt happened to be a slave to the ideas of George F. Warren, an agricultural economist at Cornell University. John Brooks describes Warren in *Once in Golconda – A True Drama of Wall Street 1920–1938*:

> He was a stocky, smooth-faced man approaching sixty, who peered through round spectacles with narrow black rims with a steady, vacuous gaze … and, invariably, carried a clutch of pencils with the ends sticking out of the breast pocket of his coat. He was given to careless dress, homely witticisms, and pithy, irrefutable sentences like, 'Here is a farm, here is a farmer, and here are the facts.' [84]

But this was not why Roosevelt liked him. Warren had formulated a theory for what Roosevelt wanted to do, that is, raise prices without resorting to printing paper money. Warren believed that any desired price level could be obtained by simply increasing the price of gold. And he managed to convince Roosevelt about this view as well.

Roosevelt had the power under the Thomas Amendment to reduce

the gold content of the dollar by 50 per cent, that is, to devalue it.[85] This meant that he could deem that one ounce of gold was worth up to $41.34 (which was basically double the prevalent price of $20.67 per ounce of gold). This would then become the price at which US mints would buy and sell gold. What was earlier a gold worth of $X would now be worth $2X.

With each dollar able to buy lesser gold, each seller would want to raise the amount of gold backing his paper dollars to previous levels. To make this happen, he would demand more paper dollars for his goods. This would lead to higher commodity prices, triggering inflation.

For example, if a commodity cost $20.67 per unit, it basically meant that the seller would receive the equivalent of one ounce of gold for it. Now, if the president decreed that one ounce of gold was worth $41.34, the price of the same commodity would be doubled, because the seller would want one ounce of gold backing the paper dollars he received. This was the essence of Warren's theory. Roosevelt had to do something pretty soon if he did not want more trouble from the farmers. On 20 August1933, through Executive Order 6261, the president decreed that all gold producers in the US had to sell their gold to the treasury secretary, at a price determined by the secretary.[86]

On 22 October 1933, during a fireside chat, Roosevelt announced that the Reconstruction Finance Corporation (RFC) would now buy all the gold being produced in the country by gold mining companies at prices to be determined from time to time. It had already been decreed two months earlier that gold mining companies had to sell all their gold to the government. Warren's theory was now being put to test.

The government of the US was entering into totally uncharted territory. Prior to this, no country with such huge gold reserves had bought gold in order to push up its price. When the US went off the gold standard in April 1933, the Federal Reserve Banks had around $2.7 billion in gold reserves, which formed around 25 per cent of the monetary gold reserves of the world. At the same time, the ratio of paper money to gold was at a healthy 45 per cent, more than the decreed 35–40 per cent.[87]

On 25 October 1933, three days after he had explained his plan to the nation, Roosevelt put the plan into practice. That morning, he met with his experts, including Warren, and set the purchase price of gold at $31.36 per ounce. This was 27 cents more than the market price of gold on that day (outside of the US, of course). On the first day, as the theory had predicted, commodity prices rose. The next day, the theory did not work and commodity prices did not rise. The third day, both gold and

commodity prices rose.[88]

What was interesting was the way Roosevelt and his team of experts were arriving at the daily price of gold. In one instance, Henry Morgenthau who would soon take over as the treasury secretary suggested to Roosevelt that they should bid up the price of gold by 19 to 22 cents on that particular day. Roosevelt, still lying in bed in his pyjamas, suggested that they bid up the price by 21 cents, because it was three times his lucky number seven.[89]

Meanwhile, another problem was brewing. The world market for gold was disregarding the daily price at which the RFC was buying gold in America. And Warren's theory was having a flip flop effect. On one day the commodity prices would go up, while on the next day they would not. It is said that when Roosevelt asked Warren why this was happening, Warren told him that they needed to start buying gold in the world markets as well. On 29 October 1933, the RFC started buying gold in the London and Paris markets too. This did not go down well with the governments there. European countries were already unhappy with what the American government was trying to do.

Even though this intervention pushed up the price of gold in dollar terms, it did not do enough for commodity prices. Since the gold buying had started, the price of wheat had risen less than 2 per cent, whereas the price of cotton had risen 1.55 per cent. Meanwhile, the world price of gold in dollar terms had risen much more.[90] Clearly, Warren's theory was not working.

With the Warren plan going nowhere, economists who had been opposed to it in the first place started gathering under the leadership of Edwin W. Kemmerer, a famous American economist, second to Irving Fisher. The Economists' National Committee on Monetary Policy was established under his leadership. This committee, which was against the Warren plan, repeatedly pointed out that Warren was an agricultural economist (or as it was said then, a farm economist) after all and not a real one in the strictest sense of the term. They said, he did not have the credentials to author and execute what was essentially a policy on money.[91]

Pressure was mounting on Roosevelt to do away with his plan. Businessmen and industrialists close to Roosevelt started coming out against the plan in public. George Harrison, president of the Federal Reserve Bank of New York, tried to explain to Roosevelt that the government would find it difficult to borrow money in the future because investors liked a stable currency and the Warren plan was clearly going against that idea.

In the meantime, Roosevelt was also getting tired of raising gold prices each day. In December 1933, the price of gold was raised only once from $34.01 to $34.06 per ounce on 18 December.[92] And that is where it stayed after that.

On 15 January 1934, Roosevelt decided that he was getting rid of the Warren plan and that the US was going back to the gold standard. On 31 January 1934, the weight of the new dollar was set at 59.06 per cent of the old one. This odd figure of 59.06 per cent was chosen to ensure that the price of one ounce (which is 31.1 grams) of gold was set at $35.

The price of gold stood at $35 per ounce till 15 August 1971. Warren's policy did have some impact, and during the eighteen-month period from March 1933 to September 1934, wholesale prices rose 26 per cent.[93] However, prices did not go back to the 1926 levels as Roosevelt had hoped.

The new gold standard was an odd gold standard because Americans could not exchange their paper dollars for gold any more. It was only an international gold standard, under which other countries could convert their dollars into gold. The gold that the American government seized from its citizens was kept in the United States Bullion Depository, better known as Fort Knox, in the state of Kentucky.

3

The Men Who Knew Too Much

John Maynard Keynes, the most influential economist of the twentieth century, was a connoisseur of paintings and had a large collection that he nearly sold when he went almost bankrupt for the second time after the crash of 1929. He was a hedge fund manager (before the term existed) and invested in a wide array of assets. In the process, he went nearly bankrupt thrice.

Having learnt from his investment mistakes, Keynes turned into what today is known as a 'value' investor. In his personal life, he was bisexual. In 1925, at the age of forty-two, he married Lydia Lopokova, a Russian ballerina. In the years to come, Lopokova became a great friend of Pablo Picasso, who sketched her many times. The two had a happy marriage, till Keynes, who had a weak heart, died in 1946 when he was just sixty-two. Both his parents outlived him. His wife died in 1988.

Very few economists of repute have speculated in the stock and commodity markets. Keynes was one of them. With this he had a very good idea of how the markets worked, and this insight showed up in his economics as well. As Nicholas Davenport wrote in *Memoirs of a City Radical,* 'Speculation improved his economics and economics improved his speculation.'[1]

Keynes really came into his own in 1936 when his magnum opus *The General Theory of Employment, Interest and Money* was published. After this book came out, there was no stopping him. The 'paradox of thrift', which he discussed in the book, was one of the earliest explanations of the Great Depression. As Paul Samuelson, the first American to win a Nobel Prize in economics, wrote in *Economics*:

> It is a paradox, because in kindergarten we are all taught that thrift is always a good thing. Benjamin Franklin's 'Poor Richard's Almanac' never tired of preaching the doctrine of saving. And now comes a new generation of alleged financial experts who seem to be telling us that black is white and white is black, and that the old virtues may be modern sins.[2]

Keynes said that when it came to thrift or saving, the economics of the individual differed from the economics of the system. For an individual to save by cutting down on expenditure made tremendous sense. But when a society, as a whole, began to save more, there was a problem. This was because the expenditure of one person was the income for another. When expenditure reduced, incomes would fall too, leading to a further reduction in expenditure. And so the cycle would continue. The aggregate demand of a society as a whole would fall in the end, leading to either lower prices, lower production or both, thus impeding economic growth and causing economic contraction. Raj Patel explains this phenomenon in *The Value of Nothing*:

> In a recession, a reasonable thing for me to do is start saving more than I did before, but if everyone does it, the aggregate level of demand in the economy falls because no one is buying things, meaning the recession gets even worse, which means we save even more, and so on.[3]

After the stock market crash in late October 1929, people's perceptions of the future changed, leading them to cut down on their expenditure. In 1930, consumer durables expenditure in the US fell by over 20 per cent and residential housing expenditure fell by 40 per cent. This continued for the next two years, and as a result, the overall economy contracted by 20.1 per cent, 14.2 per cent, and 25.1 per cent in the years 1930, 1931 and 1932, respectively.[4] This came after the ready availability of money had fuelled a spending spree on consumer durables during the second half of the 1920s.[5] As per Keynes' ideas, the way out of this situation was for someone to spend more. Citizens and businesses were not willing to spend more, given the state of the economy. The only way out of this situation was for the government to spend more on public works and other programmes. This would act as a stimulus and thus cure the recession.

In *The General Theory*, Keynes went to the extent of saying:

> If the Treasury were to fill old bottles with banknotes, bury them

> at suitable depths in disused coalmines which are then filled up to the surface with town rubbish, and leave it to private enterprise on well-tried principles of laissez-faire to dig the notes up again … there need be no more unemployment and, with the help of the repercussions, the real income of the community, and its capital wealth also, would probably become a good deal greater than it actually is. It would, indeed, be more sensible to build houses and the like; but if there are political and practical difficulties in the way of this, the above would be better than nothing.'[6]

How would this help in reviving the economy during recessionary times? Raj Patel explains this in *The Value of Nothing* as follows:

> Keynes suggested, rhetorically, that if they lacked the imagination for anything more creative, governments could simply bury bottles of money under tons of trash, and that this would help get the economy going. It may sound bizarre, but it would certainly be worth someone's while to dig up free money. To find these banknotes would require workers. Those workers would need to pay for food and shelter and everything else they needed to survive while they dug. The grocers who fed them and the landlords who rented to the workers would then have cash to spend, which they would use to buy other goods, and so on. This is called the 'multiplier effect', and it's the added return that a government gets from spending its money in the economy.[7]

Keynes was basically saying that during times such as the Great Depression, cutting interest rates to low levels would not tempt either people or businesses to borrow because of the tight economic situation. Cutting taxes so that people would have more to spend was one way out. But the best way was for the government to spend more money, and become the 'spender of the last resort.'[8] Also, it did not matter if the government ended up running a budget deficit in doing so. Budget deficit is the difference between what a government earns and what it spends.

Keynes' *General Theory* was initially ignored. It was not fashionable in those days for governments to spend more than they were earning, as it is now. As Roosevelt put it, 'Any government, like any family, can, for a year, spend a little more than it earns. But you know and I know that a continuation of that habit means the poorhouse.'[9] And if the government had to be the spender of the last resort, it had to spend much more than

it earned.

But while Keynes was expounding on his theory, it was already put into practice by Adolf Hitler, who had deployed 100,000 workers for the construction of the Autobahn, a nationally coordinated motorway system in Germany which was supposed to have no speed limits. Hitler first came to power in 1934. By 1936, the German economy was chugging along nicely, having recovered from a devastating slump and unemployment.[10] Italy and Japan had also followed a similar strategy. These countries had not bothered about their budget deficits, because they had hoped to pay them off by waging war.

Very soon, Great Britain would end up doing what Keynes had been recommending. Great Britain had more or less done away with both its army and air force after the First World War. But the rise of Hitler led to a situation where massive defence capabilities had to be built within a very short period of time. The prime minister of the time, Neville Chamberlain, was in no position to raise taxes to finance defence expenditure. What he did instead was borrow money from the public. By the time the Second World War started in 1939, the British budget deficit was already projected to be around £1 billion, or around 25 per cent of the national income. The deficit spending, which started to happen even before the Second World War, led to a boom in the British economy, especially in the south of England, where ports and bases were being expanded and ammunition factories were being built.[11]

This left very little doubt in the minds of politicians, economists and people around the world that the economy worked the way Keynes said it did. Keynesianism was to become the economic philosophy of the world for the next few decades.

Lest we come to the conclusion that Keynes was an advocate of a government running high budget deficits all the time, it needs to be clarified that his stated position was far from this. Keynes essentially believed that during recessions, trying to balance the budget, or ensuring that income matches expenditure, was not the best thing for a government to do. In a recessionary environment, the chances were that the government's income would fall because of lower tax collection. The only way to balance a budget would be to raise existing taxes, introduce new ones or cut expenditure. Any of these measures would squeeze the economy further.[12]

Keynes believed that on an average, the government budget should be balanced. This meant that during years of prosperity, governments should run budget surpluses. But when the environment is recessionary, governments should spend more than what they earn, even running

budget deficits.[13]

But over the decades, politicians have only taken one part of Keynes' argument and run with it. The idea of running deficits during bad times became permanently etched in their minds. However, they forgot that Keynes had also wanted them to run surpluses during good times.

***

The Great Depression inspired many Americans to study economics. Milton Friedman was one such individual. Friedman had scholarships to study mathematics at Brown University and economics at the University of Chicago. 'Put yourself in 1932 with a quarter of the population unemployed. What was the urgent problem? It was obviously economics, and so, there was never any hesitation on my part to study economics,' Friedman told a biographer years later.[14]

In 1963, Milton Friedman would write *A Monetary History of the United States, 1867–1960* with Anna J. Schwartz, which also featured a revisionist history of the Great Depression. Friedman and Schwartz argued that the Federal Reserve System ensured that a mere stock market crash became the Great Depression.

As we saw earlier, between 1929 and 1933, more than 7,500 banks with deposits amounting to nearly $5.7 billion, had crashed.[15] This, according to Friedman and Schwartz, led to the total amount of currency in circulation and demand deposits at banks plunging by one-third. If the Federal Reserve had only pumped more money into the banking system, enough confidence would have been created among the depositors who had lost their money and the Great Depression could have been avoided. With banks going bankrupt, depositors' money was either stuck or permanently lost to them. Under this situation, they cut down further on expenditure to try and build their savings.

As Milton Friedman had already written in *Capitalism and Freedom*, in 1962:

> The Great Depression, like most other periods of severe unemployment, was produced by government mismanagement, rather than by an inherent instability of the private economy. A governmentally established agency – the Federal Reserve System – had been assigned responsibility for monetary policy. In 1930 and 1931, it exercised this responsibility so ineptly as to convert what otherwise would have been a moderate contraction into a major catastrophe.[16]

This paragraph, as we shall see, would have a huge impact on the actions of central bank governors in the days to come.

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In 1937, a massive heart attack forced Keynes into premature retirement. But when the Second World War began, Keynes was back at work, acting as the de facto Chancellor of the Exchequer for Winston Churchill, who was then prime minister of Great Britain.

Keynes died of a massive heart attack on 21 April 1946 at the age of sixty-two. He never got around to investigating what really ended the Great Depression. The conventional explanation is that as countries entered the Second World War, the government expenditure that came with it provided the required stimulus to various economies, thus ending the Great Depression.

The recovery of the US from the Great Depression was an unintended consequence. This term essentially means an unexpected outcome of a purposeful action. When Roosevelt set the price of gold at $35 per ounce, he was merely acting according to his belief that by increasing the price of gold, he could create some inflation.

This did happen, and Roosevelt did manage to create some inflation. But the higher price of gold also led to something unexpected that Roosevelt had not foreseen. The devaluation of the dollar against gold increased monetary gold stock. Between December 1933 and July 1934, the monetary gold stock nearly doubled and increased at an average annual rate of 15 per cent between December 1934 and December 1941.[17]

There were several reasons for the huge inflow of gold into the US. First and foremost was the fact that gold was now worth $35 per ounce against the earlier $20.67. Hence, anyone bringing gold into the US and exchanging it for dollars would receive more dollars for it. To a large extent, this explained the initial gold import worth $758 million between February and March 1934, immediately after the devaluation of the dollar by Roosevelt.[18]

The second reason was that the higher price motivated gold mining companies worldwide to produce more gold. This added almost $1 billion worth of gold every year to the existing gold reserves. The third reason was the rise of Hitler, the German mobilization for war, and the annexation of Czechoslovakia, Austria, and Rhineland. Due to this, a huge amount of gold was channelled across from Europe to the US. As a later-day economist put it, 'Without … Hitler to spawn a capital flight to

the US, virtually no US recovery would have occurred before 1941.'[19]

These three reasons ensured that the value of the gold held by the Federal Reserve System in the US tripled to $12 billion between 1933 and 1937.[20] But how did all this gold translate into a recovery?

The Gold Standard Act of 1934, which had devalued the dollar to $35 per ounce from $20.67, also set up a stabilization fund, which was to be used by the American treasury for intervening in the foreign exchange market. But this fund was endowed in only gold. This meant that the gold coming into the country could not be bought by the treasury, because the fund did not have the dollars required to buy it as it was endowed only in gold. There was no sterilization of the gold that was coming in, and all of it quickly seeped into the system.[21]

With all the extra gold entering the system, the supply of paper money issued against gold also grew. America was still on the gold standard, and an increase in the amount of monetary gold meant an increase in the paper money in the economy. Between December 1933 and December 1936, the M1, a measure of money supply (which includes physical currency and the money kept in demand accounts), rose by 27 per cent. It rose by 56 per cent between December 1937 and December 1942.[22]

There was a lot of money flowing through the system, and it percolated through the rest of the economy. Interest rates were also pushed down. The interest rate on commercial paper, a kind of financial security through which businesses borrow money for less than a year, fell from an average of 2.73 per cent in 1932 to 0.75 per cent in 1936.[23]

With loans easily available at extremely low interest rates, the industrial production expanded by more than 40 per cent between 1932 and 1937.[24] This also led to the GNP of the US rising by 33 per cent between 1933 and 1937, and by 49 per cent between 1938 and 1942. The rate of unemployment fell from its peak of 25 per cent to 10 per cent in 1941.[25]

Prices had fallen 37 per cent between 1929 and 1933.[26] They subsequently rose by 27 per cent between December 1933 and December 1936, and by 56 per cent between December 1937 and December 1942,[27] as the money supply expanded rapidly. This created an expectation of inflation among people, who then began spending their hard-earned money, thus effecting a revival of the American economy.

Despite this recovery, the index of industrial production, a measure of industrial activity in the country, crossed its 1926 level only in the Second half of 1942.[28] This was after the US entered the second World

War in late 1941, in response to the Japanese attack on Pearl Harbour in Hawaii. After that, the US government spending shot up, as it had in Great Britain in late 1930s, and the US truly and surely came out of the Great Depression.

The role of money supply in the recovery that slowly followed the Great Depression was first highlighted by Friedman and Schwartz in their study *A Monetary History of the United States, 1867–1960*. They wrote:

> The rapid rate of rise in the money stock certainly promoted and facilitated the concurrent economic expansion … the rapid rate [of growth of money stock] in the three successive years from June 1933 to June 1936 … was a consequence of the gold inflow produced by the revaluation of gold, plus the flight of capital to the United States.[29]

Just as the ideas of Keynes had, the ideas of Friedman and Schwartz would have a huge impact on economists, politicians and central bankers in the years to come.

4

Hitler Falling, Dollar Rising!

Hyperinflations destroy economies. They also drastically change the way people think and, in turn, whom they vote for. Democracy may be the best form of government invented by mankind, but it ends up electing its share of idiots as well.

A great example of this is the German hyperinflation of the 1920s, when the Reichsbank, the central bank of Germany, had gone on a paper-money-issuing spree. By 15 November 1923, the day the inflation officially ended, it had printed a whopping 92.8 quintillion (i.e., 92,800,000,000,000,000,000) paper marks (the German currency during those days). Five days later, on 20 November 1923, these marks were made convertible into a new currency at the rate of one trillion to one.[1]

The increase in money printing did not happen overnight; it had been happening since the First World War had started. By the time the war ended, in October 1918, the amount of paper money in the system was four times the money at the beginning of the war. Despite this, prices had risen only by 139 per cent. But by the beginning of 1920, the situation had reversed. The money in circulation had grown 8.4 times since the start of the war, whereas the wholesale price index had risen nearly 12.4 times. It kept getting worse. By November 1921, circulation had gone up eighteen times and prices thirty-four times. By the end of it all, in November 1923, the circulation of money had gone up 245 billion times. In turn, prices had skyrocketed 1,380 billion times since the beginning of the First World War.[2]

During the initial stages of inflation, the man on the street does not know that the government is printing money. He has confidence in the

paper money he is using. He does not know his paper money will lose value soon and so does not rush to spend it. Gradually, the news gets around that the government is printing money. At this point, there is some rush to spend money before it loses its value. This is when prices start to grow at the rate at which the money is being printed. In the final stage of inflation, as the central bank continues to print money, backed by the government, people start to feel that this will continue indefinitely. They try to get rid of their paper money, as soon as it comes into their hands. This, in turn, causes prices to rise faster than the rate at which the money is being printed.[3]

Eventually, prices rise at such a fast rate that the central bank cannot print enough money to keep up. In Germany, thirty government-owned printing presses and 100 private printing presses could not churn out money fast enough to keep up with the inflation. On 23 October 1923, a statement issued by the German central bank said it had been able to print only 120 quadrillion (i.e., 120 followed by 15 zeroes, or 120 x 10^{15}) paper marks, when the demand had been a quintillion (one followed by 18 zeroes, 10^{18}).[4] Practically all money had become worthless. A wheelbarrow full of money was not good enough to buy a newspaper. Walter Levy, a well-respected German-born oil consultant working in New York, would later recall that his father had taken out an insurance policy in 1903. He had religiously paid the premiums on the twenty-year policy. When the policy had matured in 1923, the money he received was just enough to buy a loaf of bread.[5] The wealth of the Germans was largely held in government bonds and it got completely wiped out due to hyperinflation.[6]

Things were so bad that farmers would not sell their produce for money. Businesses had to employ more people just to make calculations. Also, with prices increasing at the rate they were, the will to work began dying. The production of coal in the coal mining area of Ruhr fell from 928 kg per miner in 1913 to 585 kg per miner in 1922.[7]

The novelist Thomas Mann captured the spirit of the times beautifully when he wrote:

> For instance, you might drop in at a tobacconist's for a cigar. Alarmed by the price, you'd rush to a competitor, find that his price was still higher, and race back to the first shop, which may have doubled or tripled its price in the meantime. There was no help for it, you had to dig into your pocketbook for it and take out a huge bundle of millions, or even billions, depending on the date.[8]

Worthlessness was the principal product of hyperinflation. In *The Ascent of Money,* Niall Ferguson quotes Elias Canetti, a famous playwright, on his experience about living through the hyperinflation in Germany.

> [It is] a witches' sabbath of devaluation where men and the units of their money have strongest effects on each other. The one stands for the other, men feeling themselves as 'bad'as their money; and this becomes worse and worse. Together they are all at its mercy and all feel equally worthless.

It need not be said that a generation of middle class people saw their savings fall to zero. Unionized unemployment rose to 30 per cent in 1923, from under 1 per cent in the previous year.[9] People began to feel a sense of hatred and a loss of faith in the politicians of the day and in the German democratic system. This paved the way for the rise of Adolf Hitler.

Hitler's Nazi Party (a short form for *Nationalsozialistische Deutsche Arbeiterpartei* or the National Socialist German Workers Party) had attempted a failed coup in 1923, but in the next elections in May 1924, the party won thirty-two seats. This was followed by another decent showing six months later in December 1924, when the party won twenty seats. As Henry Hazlitt, an American journalist who worked for the *New York Times* and later *Newsweek,* wrote in *What You Should Know About Inflation,* 'It was in the tremendous German inflation of 1923 that the seeds of Nazism were sown.'[10]

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After the failed coup attempt in 1923, Hitler was imprisoned. During his confinement, he wrote his autobiography *Mein Kampf* (My Struggles). The book was released in two volumes in 1925 and 1926, and still remains in print all these years later. In this book, Hitler wrote about the two evils in the world: communism and Judaism, and stated that his aim was to eradicate both. Hitler divided the human race based on physical attributes. He went on to state that the German Aryans, with their blue eyes and blonde hair (which Hitler himself had), were at the top of the hierarchy. At the bottom of the hierarchy were the Jews, Poles, Czechs and Russians. He further wrote that the Jews were conspiring to stop the master race of Germans from ruling this world.[11]

Hitler became the Chancellor of Germany on 30 January1933. He would stay the Chancellor of Germany till 30 April 1945, when he

committed suicide along with his wife of two days and mistress of many years, Eva Braun. Many of Hitler's actions during his twelve years at the helm of the German government had already been hinted at, or, in some cases, elaborated in *Mein Kampf*. He sent Jews to concentration camps throughout Europe and began a series of wars that came to be known as the Second World War. As the Second World War came to an end, the financial system of the world was in a mess. Instead of letting things drift as they had after the First World War, this time various countries decided to meet and develop a new financial system for the world.

***

Between 1 and 22 July 1944, a group of bankers, politicians and economists gathered at Mount Washington Hotel in Bretton Woods, New Hampshire, in the US. Their aim was to discuss and establish a post-war international financial system. Around 730 delegates representing forty-four countries had come to the conference, which had to be extended beyond its original schedule.

There were two pivotal figures at the conference. One John Maynard Keynes. The other was Harry Dexter White, assistant treasury secretary of the US. Coincidentally, both Keynes and White died of a heart attack within a few years of the conference. White may have also been a spy for the Soviet Union, and might have passed on confidential information about the negotiations to the Russians.[12]

Between the two world wars, countries had tried to devalue their currencies and export their way out of trouble. This strategy only worked as long as a country was devaluing faster than other countries. This led to a situation where deflation, or falling prices, became an international phenomenon.

Against this background, it became very important to design an international monetary system in which currencies would have a fixed value against each other. The classical gold standard that had been used before the First World War could have been such a system. But for it to work, gold had to be adequately distributed among all the major countries of the world. The European countries which were involved in the Second World War were highly in debt to the US and had transferred large amounts of gold to the US.[13]

Countries such as Great Britain had suffered greatly upon returning to the classical gold standard after the First World War. The classical gold standard did not enjoy much support among the people who had gathered at the conference.

The idea was to come up with a system which allowed for stable exchange rates between the paper currencies of various countries and, at the same time, allowed these paper currencies to be converted into gold.

As Keynes put it, 'We … have been trying to accomplish something very difficult to accomplish … It has been our task to find a common measure, a common standard, a common rule acceptable to each and not irksome to any.'[14]

The system that finally evolved out of the conference had the US dollar at the heart of it. The US agreed to convert paper dollars to gold and gold to paper dollars at the rate of $35 per ounce of gold (the rate set by Roosevelt after he became president). So the dollar became as good as gold.

Only the central banks of countries were allowed to convert their dollars to gold. All other paper currencies were pegged to the dollar and would have par values against the dollar. In the case of Great Britain, the par value was set at the prevailing exchange rate of $4.03 for £1. The par value of the Canadian dollar was set at 100 US cents or $1. These values could fluctuate within a range of 1 per cent on either side. Members of the Bretton Woods financial system had to ensure that in their respective territories, all transactions took place within these margins.[15]

This meant that if the dollar was overvalued with respect to the pound, the British government would have to be ready to sell dollars and bring its value within the permitted range. Conversely, if the dollar was undervalued with respect to the British pound, the British government would have to buy dollars to pump up its value and bring it within the permitted range.

The financial system that evolved out of Bretton Woods made the dollar the lynchpin of the international monetary system. Never had the countries of the world formally come together to make one currency the leader of all others as they did at Bretton Woods.

With the Bretton Woods agreement in place, the US dollar would be the only international reserve currency. Unlike earlier, it was now the only currency that could be converted into gold. Countries would have to maintain their foreign exchange reserves in US dollars.

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The Bretton Woods system was attempting to combine the best of the gold standard and the paper money systems which had prevailed during most of the time between the world wars. As Henry Hazlitt writes in

> What they set up, under the leadership of Lord Keynes of England and Harry Dexter White of the United States, was a compromise designed to please the advocates of paper money, 'flexibility', and 'national independence', or 'self-determination,' of currencies, but at the same time to reassure conservatives that these currencies would retain a 'link' to gold. The supposed great merit of the new system was that the monetary role of gold – the 'tyranny' of gold – would be drastically reduced.[16]

The system was flexible enough to allow a country to devalue its currency anytime up to 10 per cent. The International Monetary Fund (IMF) could not object to it. If a country wanted to devalue its currency by a further 10 per cent, the IMF had to agree or refuse within three days. If a country wanted to devalue even further, it had to consult the IMF, and if the IMF refused its request, the country could simply leave the system.[17]

Also, only one currency, that is, the dollar was convertible to gold. All other currencies were convertible into the dollar. This brought down the need for gold reserves. What it also did was give every country other than the US the freedom, or flexibility, to print as much money as it wanted. It relieved every other country of strict monetary discipline.[18]

Under the gold standard, there had to be some link between the amount of paper money that a country could print and its gold reserves. But under Bretton Woods, the link was completely broken. The only country that had to ensure that it did not print too much paper money was the US. If it did, the central banks of the other countries would land up at its doors asking for the dollars they held to be converted into gold. And gold, unlike paper money, was not unlimited.

There was too much pressure on the US to keep the system going. If other currencies were also made convertible into gold, the pressure would have been a little less. But nearly three-fourths of the world's monetary gold was held by the US. And no other country was really in a position to allow its paper money to be made convertible into gold.

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The Bretton Woods Agreement made the US dollar the world's currency. The role that was earlier played by gold was now to be played by the US dollar. But just being deemed the world's currency was not enough. Enough dollars had to circulate outside the US for other countries to be

able to carry out international trade (i.e., exports and imports) in US dollars, instead of gold or British pounds, as had been the case till then. This meant that the US would have to ensure that more dollars were leaving the US than coming back to it. The greater the number of dollars it supplied, the more dollars other countries around the world and overseas merchants would have. This, in turn, would lead to greater trade and economic growth.

But paradoxically, as the number of dollars outside the country grew, so did the chance of central banks of other countries presenting them to the US and asking for redemption in gold. Greater redemption would mean that the gold stock of the US would keep reducing. The US would ultimately have to either stop redeeming dollars or devalue the dollar in terms of gold so that it would have to give lesser gold for every dollar redeemed.

Either way, it would lead to the system collapsing. If the dollar was devalued and a lesser amount of gold was given out for every dollar redeemed, countries which had accumulated dollars would feel cheated. And if the redemption of dollars for gold was stopped, countries which had ended up accumulating dollars would end up with paper money and no gold.

The irony of the Bretton Woods system was that the stronger it grew, the more unstable it became. This was first pointed out by the Belgian economist Robert Triffin, and is thus called Triffin dilemma. Triffin was also of the opinion that if the US did not provide enough dollars, the world could see the kind of liquidity crunch that had caused the Great Depression.[19]

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At that time, countries around the world did not have enough dollar reserves. Nearly half of the world's trade was still conducted in British pounds.[20] One way for the European and other countries to earn American dollars was to export goods to the US, while ensuring that their total imports from the US were lesser than their total exports to the US. This would help them accumulate dollar reserves.

At the end of the Second World War in 1945, the US was the greatest supplier of both manufactured and capital goods in the world. Britain, western Europe, and even Japan were heavily dependent on the US for equipment that would allow their industries to operate. It was the same case with consumer goods, which were needed to help their populations maintain a reasonable standard of living.[21] There was also the attraction

of American goods in general, and the world wanted them, whatever the cost. This meant importing Cadillac cars, Coca-Cola, nylons, and other products. These products were not really necessary for general welfare, but they cost dollars, which were precious at that point of time.[22]

To pay for these imports, European countries would have had to export goods to the US and other countries and get paid in dollars. But they were recovering from a war and the infrastructure that was required to manufacture goods for export was not in place.

In vanquished Germany, the directive was that nothing should be done to restore the German economy above the minimum level required to ensure that there was no disease or unrest, which might endanger the lives of the occupying forces. Soviet troops were followed by industrial experts who ripped machinery, tools and even electrical and plumbing fixtures out of German factories and loaded them on to trains to be transported to the Soviet Union. This started to happen even before the Reparations Committee met in Yalta, towards the end of June 1945. The Soviet Red Army was living off German land, because the Soviet Union was not in a particularly good shape after the war.[23]

Soon, the Soviets lost interest in dismantling and taking second-hand machinery and began taking away the current production of Germany. The Soviet Union badly needed assistance, and since it had refused to join the Bretton Woods system, there was no source of help available.[24]

It also did not help that Germany had been carved into two. The eastern region, which was the main agricultural region of the country and on which the western region depended for food, was handed over to the Soviets.

Eventually, the realization set in that an economic recovery in Europe was not possible without an economic recovery in Germany, the largest economy in Europe. Further, if Europe did not recover, there was no way that the Bretton Woods system would have worked. From July 1945, it was decided that coal production would be stimulated in Germany for delivery to Belgium, France and the Netherlands.[25]

Despite this, the production of coal and lignite in West Germany, which had the Ruhr region and was the second largest producer of coal in Europe after Britain, grew slowly and was at 133 million tonnes in 1947. It had produced 206 million tonnes in 1938, before the start of the Second World War. A slowdown in production had a direct impact on the production of steel, which fell from 280 million tonnes in 1938 to 178 million tonnes in 1947. This shrinkage of output meant that the whole economy of Europe was slowing down.[26] And a slowdown would mean that they would have fewer goods to export and earn dollars

against. This, in turn, would be seen as a failure of the Bretton Woods system.

Germany was not the only country facing problems. Half of the machines in Holland were of German make. But given the scarcity of spare parts in Germany, even if a small part was broken, an entire machine had to stay idle. This slowed down entire factories.[27]

Ultimately, a dollar shortage developed, because other countries imported far more from the US than they were able to export to it. The prevailing feeling was that the US was not able to supply enough dollars to the world market. The real trouble was that Britain, Europe and even Latin America wanted to buy more from the US than sell to it. In 1947, the US was supplying the outside world $1 billion worth of goods and services in excess of what it received in return, in a single month alone.[28]

This shortage of dollars was essentially a shortage of goods that could be exported to the US. Other than the reasons we have already seen, a major reason for the lack of goods to export was that most European currencies were overvalued in terms of the US dollar. Henry Hazlitt explains this beautifully through an example in his 1947 book, *Will Dollars Save the World?*

> Suppose, for example, that a French brandy sells in Paris for 1,200 francs a bottle. The black-market rate for the franc is about 280 to the dollar as this is being written. Let us assume that in a free market the franc would sell a little higher – say about 240 to the dollar. At such a rate the brandy could be bought for $5 a bottle in American money. But the official rate for the French franc, which the American importer is now forced to pay, is 119 to the dollar. This means that the brandy must cost him more than $10 a bottle. The arbitrary exchange rate enforced by the French police raises the price as much as would a 100 per cent American import duty … And this applies to every French import to this country … In the same way, if we look at the problem from the other side, a typewriter that costs $100 in the United States would cost a French buyer, if he had to pay 240 francs for the dollar, 24,000 francs. But as he is able, thanks to exchange control and American loans, to get the dollar for only 119 francs, the typewriter costs him less than 12,000 francs. And this applies to every American import to France. Is it surprising that Frenchmen should want to buy a great deal from us?

Given the fact that most European currencies were overvalued against the dollar, it was hardly surprising that they imported more from America than they exported to it. This problem could have been corrected by devaluing these currencies against the dollar – something which the rules of Bretton Woods allowed. A 10 per cent devaluation could be carried out by any member country and did not require the permission of the IMF. But a decision to devalue as soon as the system had started functioning would mean that chinks had already started to show in the new financial system.

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The Secretary of State, George C. Marshall of the US, saw things differently. Having returned from Moscow in April 1947, he was convinced that Europe was in a bad shape and needed help. William L. Clayton, undersecretary of state for economic affairs, had similar views when he returned from his trip to Europe in May of the same year. Clayton was particularly worried about the breakdown of economic links between cities and the countryside, as farmers were hoarding food and the food distribution system had broken down in the cities of Europe.[29]

In fact, evidence from Germany seemed to suggest that people were going back to barter. Over the weekends, city folk were going to the countryside looking for wheat, rye, fruit, and vegetables such as potatoes. In exchange, they were ready to offer household goods such as shoes, watches, linen and furniture. In some cases, city folk were even offering to work free for the farmers by helping repair wells, windows and roofs in exchange for a few pounds of potatoes or a small basket of cherries.[30]

Deeply aware of this situation, Marshall gave a speech on 5 June 1947, at Harvard University in which he elaborated on why Europe needed economic aid from America:

> The truth of the matter is that Europe's requirements for the next three or four years of foreign food and other essential products – principally from America – are so much greater than her present ability to pay that she must have substantial additional help or face economic, social, and political deterioration of a very grave character … It is logical that the United States should do whatever it is able to do to assist in the return of normal economic health in the world, without which there can be no political stability and no assured peace. Our policy is directed

> not against any country or doctrine but against hunger, poverty, desperation and chaos. Its purpose should be the revival of a working economy in the world so as to permit the emergence of political and social conditions in which free institutions can exist.[31]

This speech was the starting point of what came to be known as the Marshall Plan. From 1948 to 1954, the US gave $17 billion to sixteen countries in western Europe as a part of the Marshall Plan, which was officially known as the European Economic Recovery Program. The plan would be helpful to the US, as it would generate demand for American products, while also helping European countries to earn dollars, thus ending the dollar shortage.[32] Once the dollar shortage ended, the Bretton Woods system could be deemed a success.

There was another reason why America wanted to assist Europe economically. This was the threat of communism emanating from the Soviet Union and encapsulating all of western Europe. Americans assumed that if they helped European countries that had strong communist parties but non-communist governments, this would help stop the spread of communism.

There was some opposition to the idea as well. Very little aid, as well as credit money, had gone to Germany after the First World War. But after the hyperinflation of 1923, money had started to pour in from other nations. A substantial part of the preparation for the Second World War was financed through this money. The fear was that something like this could happen again. The other fear was that such easy money would allow non-friendly and hostile European nations to continue to maintain large armies. If aid was not given, armies would be dismantled so that men could work on farms and produce the food required to feed their countrymen.[33]

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Great Britain was not a part of the Marshall Plan. This was because it had already been granted a separate loan of $3.75 billion in 1946 by the US. The loan was called the Anglo-American Free Trade Agreement and had been negotiated between the Treasury Secretary F.M. Vinson, William Clayton, and the undersecretary of state for economic affairs on one side, and John Maynard Keynes on the other.[34]

Keynes had been sent to obtain a grant or a gift from the US which knew that Great Britain was more or less bankrupt. But the US was not willing to offer either. What it was ready to offer was a loan, but at a

low interest rate of 2 per cent. The last payment on this loan, amounting to a sum of around $83 million, was made on 29 December 2006.[35]

The loan was given on the key-currency principle, which held that it was impossible to generate economic recovery and employment in all countries at once. It made sense to concentrate on certain key currencies and countries, such as Great Britain and the pound sterling. One could first generate a recovery here and then hope that this recovery would spill over or trickle down to other countries.[36]

But neither the loan to Britain nor the Marshall Plan aid to western Europe helped Europe earn enough dollars to make the Bretton Woods system succeed. By mid-1949, the industrial output in western Europe had reached its highest since the start of the war, having grown 117 per cent since 1938. Despite this, the trade deficit (imports minus exports for a particular region) of the countries with the US was increasing. In the last three months of 1948, the deficit had been at $1.2 billion and increased to $1.6 billion in the first three months of 1949. Recession in the first six months of 1949 in the US clearly did not help either. This depressed demand in the US, causing industrial production to fall 10 per cent in the one-year period between November 1948 and October 1949.[37]

The recession also forced American companies to cut prices in order to continue selling the goods they manufactured. This led to two problems. Firstly, European products found it tough to compete with American products within America. This led to the Europe's share of the American market falling from 15.4 per cent in 1948 to 12.6 per cent in June 1949. Secondly, as a result of this, exports from Europe to America dropped. Lower exports meant that Europeans earned fewer dollars.[38]

The lower prices of American products also ensured that Europeans imported more from America. In 1948, Europe had imported goods worth $4.34 billion from America. This went up to $4.70 billion for the first six months of 1949, on an annualized basis. In 1945, the exports of Great Britain stood at 50 per cent of the level in 1938, before the start of war. These exports could only support 33 per cent of the total imports into the country.[39] Within a year of receiving it, the British spent $2.45 billion of the $3.75 billion American loan they had taken in 1946. They were simply not earning enough dollars to finance their imports.[40]

By 1949, the situation had improved a little. Britain was exporting 55 per cent more than it had in 1938. And yet, the dollars earned through these exports were only enough to finance around 85 per cent of Britain's imports.[41] It also did not help that countries and merchants who imported goods from Britain were expecting it to devalue the

pound in terms of the dollar. If Britain did devalue the pound, British goods would become cheaper in American dollars, allowing importers from the rest of the world to get a better deal. This expectation also had an impact on British exports, as importers from other parts of the world postponed their purchases. Devaluing the pound against the dollar became the only way out for Britain. This would ensure that British goods were competitively priced in international markets. On 18 September 1949, Sir Stafford Cripps, the then Chancellor of Exchequer, devalued the British pound by 30.5 per cent to $2.80 from $4.03. What this meant was that British goods which previously cost one pound, or $4.03, would now cost $2.80. The price of British goods in dollar terms was around 30.5 per cent lower. Britain's great hope was that this would boost its exports, bringing in more dollars in the process.

Once Britain devalued the pound, other countries started devaluing their currencies as well. Within a week of Britain's move, twenty-five countries had devalued their currencies.[42]

Winston Churchill, who was by then in the opposition, pointed out on no fewer than nine occasions that Cripps had denied any possibility of devaluing the British pound. In fact, Cripps had done so twelve times and not nine times as pointed out by Churchill. When asked about his denials, Cripps suggested that he could not reveal that he was devaluing the pound because people would then stop accepting the pound to be worth $4.03. As Hazlitt said, 'This "defence" amounts to saying that unless the government had lied, it could not have successfully deceived the buyers of British goods and the holders of sterling.'[43]

The devaluations across the world did not solve the problem of the 'dollar shortage', but it did help in improving the situation a little. In 1947, the American surplus (i.e., the difference between the number of dollars coming back into America and the number of dollars leaving it) was at $8 billion. By 1949, it had come down to a little over $4 billion.[44]

Britain's devaluation, followed by a series of other devaluations, was the first chink in the armour of the Bretton Woods system. These competitive devaluations also showed that the Bretton Woods system was fragile, and one move by one country could lead to a series of similar moves by other countries that were a part of the system and could thus weaken the overall system.

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The aim of the Marshall Plan was to get Europe on its feet again, so that it could rebuild its industry and begin exporting again. The hope was

that over a period of time, Europe's exports to the US would exceed its imports. This would ensure that Europe would have enough dollars as part of its reserves, an essential factor for the success of the system drawn up at Bretton Woods.

Even though the Marshall Plan and the Dodge Plan (a separate plan for Japan) were successful, this did not ensure that European exports to the US exceeded imports, at least till 1971. Throughout the 1950s and '60s, American exports to Europe were greater than European exports to the US. Europe had a trade deficit (i.e., its imports from the US were greater than its exports to America) and America had a trade surplus (i.e., its exports to Europe were greater than its imports from it) with Europe. Despite this, the dollar shortage ended. Beginning in the late 1950s, Europe stopped having any real dollar shortage. It ended up with a dollar surplus and had many more dollars than it required. There were several reasons for this.

The Cold War and the threat of communism spreading to other parts of Europe came to the rescue of Europe. After the Second World War, the world had two superpowers – the US and the Soviet Union. While the US stood for capitalism, democracy and everything that came with it, the Soviet Union stood for communism and everything that came with it. This state of affairs came to be known as the Cold War. It was so named because it was more of a tactical and diplomatic war, and there was very little military action. The Western world, led by the US, feared that communism, which the Soviet Union had pushed through in East European countries such as Poland and Czechoslovakia, could spread to parts of western Europe as well. As explained earlier, this was a major reason behind the economic aid to western Europe through the Marshall Plan. But the fear of military action from the Soviet Union in Europe gradually led to the establishment of American military bases in Europe.

In addition, as the Cold War spread, the US also set up bases in other parts of the world, spending around $3 billion a year on their operation and maintenance. A large part of this money was spent on bases in Europe.[45] This was one way in which a surfeit of American dollars landed up in Europe. The second reason behind the end of the dollar shortage in Europe was also provided by the Soviets. By the mid-1950s, like all other countries, the Soviets also had to use American dollars in international transactions. No one wanted to be paid in roubles. The advantage of dollars was that they could be easily exchanged for gold. And if you did not want to exchange them for gold, you could leave them in a bank in New York and earn interest on it. So, like everyone

else, the Soviets also had dollars in banks in New York.[46]

Hungary was one of the countries in which the Soviet Union had managed to install communism. In October and November 1956, there was a nationwide uprising against the Hungarian government backed by the Soviet Union.

Soon after the revolt, the Soviet Union decided to move its dollar balances from New York to Moscow Narodny Bank in London, a bank which had a British charter, but was owned by the Soviet Union. They feared that if the Cold War escalated, the US might freeze the Soviet Union's dollar balances in New York. It was better to keep the dollar reserves in London. On 28 February1957, the Moscow Narodny Bank put out a sum of $800,000 on loan through a merchant bank. This dollar loan was borrowed and repaid outside the American banking system. Other than owning the Narodny Bank in London, the Soviet Union also owned the Banque Commerciale pour l'Europe du Nord in Paris. This bank also took a part of the $800,000 dollars being lent by Narodny Bank and lent it out further. The telex address of this Paris bank was 'Eurbank'. These dollars came to be known as Eurobank dollars and later Eurodollars.[47]

This small move by the Soviet Union became a big idea. As Adam Smith (George Goodman, writing under a pseudonym) puts it in *Paper Money*, 'The charm of Eurodollars, to bankers, was that they didn't belong anywhere and owed no allegiance to anyone; therefore, nobody regulated them.'[48]

Eurodollars were regulated neither by the Federal Reserve of the US, nor the Bank of England, nor any of the other central banks, such as the German Bundesbank. Any central bank required banks under its jurisdiction to maintain a certain portion of their deposits as reserves. There were also other rules about the size and type of loans that could be made.

The Americans were never really the kind to let go of an opportunity once they spotted it. Before 1955, there were only a few American banks operating abroad. But soon, the numbers started to grow, and American banks were soon handling nearly two-thirds of the Eurodollar business and a large proportion of the long-term financing operations across the world.[49] American banks raced to London to establish their branches to operate in the Eurodollar market, where there were no reserve requirements or interest rate ceilings. Soon, American banks were sending dollars abroad to be lent in the Eurodollar market. The size of this market grew to around $200 billion by early 1970s.[50]

Since the US was the only country that could issue dollars, all the

dollars in the Eurodollar market had originated in the US at some point of time. The more the number of dollars that landed up in the Eurodollar market, the shakier the Bretton Woods system grew, simply because these dollars could be presented to the US to be redeemed in gold. The Federal Reserve of the US could have stopped American banks from playing in the Eurodollar market and controlled a part of a big problem. But the Americans were not the only ones playing in the Eurodollar market.

Such was the attraction of the Eurodollar market, that the British, the Germans, the Dutch and even the Canadians were present in it. Any attempts by the Federal Reserve to prevent American banks from lending in the Eurodollar market would have exposed the Fed to accusations of handing over an American-dominated market to competing banks from other countries.

If American banks were busy sending money abroad, could other American companies have been far behind? Between 1958 and 1961, 1,500 American subsidiaries were set up in Europe. These companies brought in a foreign direct investment of $8.8 billion. Of this amount, Great Britain received the major chunk of $3.81 billion, while West Germany received around $1.5 billion and France received around $1 billion. A major part of this investment was made in breakfast cereals, cosmetics, drugs and soft drink businesses.[51] This figure went up to $27 billion by 1971.[52] The output of American companies operating abroad was four or five times the value of American exports.[53] All this helped plug Europe's trade deficit with America.

During late 1940s and early 1950s, there was a great craze among Europeans for American products. But gradually, the reverse also happened. Americans too developed a craze for European products. During the 1960s, German car makers (particularly the Beetle), Italian shoemakers, and French wine makers, were able to do good business in the US.[54] This helped the Europeans increase their exports to America during the sixties. Interestingly, in 1946, after the end of the Second World War, American exports were double its imports. But over the next twenty-five years, its exports grew at a much slower pace. By 1971, American exports had grown to only four times the exports it had seen in 1946. In comparison, its imports had grown nine times. In 1971, the US ran its first trade deficit in goods with the rest of the world (majorly with Europe), which meant that it had imported more goods from the rest of world than the rest of the world had imported from it.[55]

5

Exorbitant Privilege

The US was running a dollar payment deficit with the rest of the world at the end of 1958. This meant that more dollars were leaving America than were coming back to it.[1]

But as soon as this happened, concern rose on both sides of the Atlantic. Some American experts felt that America's dollar deficit with the rest of the world was too high and needed to be brought down to around $1–1.5 billion. Along with this there was a realization that a certain minimum deficit was necessary; otherwise the rest of the world would not have enough dollars to carry out international trade.[2]

Various ways were outlined to reduce the deficit. A major portion of the deficit was because of the money required to maintain the American military presence in Europe, particularly Germany. Hence, Dwight Eisenhower and, later John Kennedy, who followed Eisenhower as president of the US, were of the opinion that Germany should buy American goods to offset the cost of the American military establishment within Germany.[3]

A series of restrictions such as exchange controls and import quotas had come up against American goods all over the world including Europe after the second World War. This was done to ensure that people bought domestic goods rather than American goods. To cut down on the US dollar deficit, it was suggested that American diplomacy should concentrate on getting these restrictions removed.[4] Any success at this would have meant an increase in American exports and a lower dollar deficit.

It was also suggested that the billions of dollars from the Marshall Plan loans and the $3.75 billion loan given to Great Britain, which

remained unpaid, needed to be repaid. This acceleration of loan repayment would ensure that the dollar deficit would come down and, in turn, lower the risk of dollars being converted into gold.[5]

The opposition in Europe towards the American dollar deficit with the rest of the world was first raised by economist Jacques Rueff. He went to meet Charles de Gaulle, then president of France, on 13 March1961.[6]

The core of the argument that Rueff made to de Gaulle was that the greater the amount of dollars the US sent abroad, the lower would be the amount of gold backing it. This meant that the US would not have enough gold to redeem all the dollars going around. This put the entire Bretton Woods system at risk.[7]

Rueff sent a note to the president on 5 May 1961, reiterating the points he had made when they had met. Based on the note, he wrote a series of three articles between 27 and 29 June 1961, in the popular French paper *Le Monde*.

If other countries which were a part of the Bretton Woods system did not have enough dollars to buy imports, they would have to cut down on their imports or increase their exports to earn enough dollars to pay for their imports. The same did not hold true for the US. As Christopher S. Chivvis points out in the research paper 'Charles de Gaulle, Jacques Rueff and French International Monetary Policy under Bretton Woods':

> Because the USA was permitted to settle its foreign accounts in dollars, rather than gold … The USA could cover its deficit by 'printing dollars, which it was relatively confident would never be exchanged for gold'.[8]

The rest of the world had to 'earn' dollars to import goods. The US had an 'exorbitant privilege'. It could simply print the required dollars. The phrase 'exorbitant privilege' is often attributed to Charles de Gaulle, though it was actually coined by Valéry Giscard d'Estaing, who was minister of finance in the de Gaulle government.[9]

Rueff referred to the situation as the 'marvellous secret of a deficit without tears'.[10] He also felt that the entire system was inflationary. But how did these dollars cause inflation? Let us understand this through an example of a Japanese exporter who exported television sets to the US. For these exports, he was paid in dollars. The exporter needed to convert the dollars he earned into yen. This was because his expenses were in yen and he also needed to draw up his balance sheet and profit and loss account in terms of yen. He had to convert these dollars to yen

at the Japanese central bank, which had to print extra yen to exchange these dollars.

The Bank of Japan (the Japanese central bank) ended up with dollars and the exporter got the extra yen printed by the central bank. These yen were then deposited by the exporter with a Japanese bank. The Japanese bank thus saw an increase in deposits and could lend out this money within Japan, leading to an increase in money supply and possibly inflation. As Chivvis puts it, 'the deficit was always expanding global credit. This, Rueff held, was creating inflation.'[11]

The Bretton Woods system was thus inflationary and the supply of dollars leaving the US determined the supply of other currencies, and in a way, the US 'exported' inflation all across the world through the 'exorbitant privilege' it had.

In January 1962, Rueff wrote another note for his friends in the French government elaborating on the dangers that lay ahead for the Bretton Woods system and arguing that the system 'places the whole economy in the situation of a man falling from the tenth floor: everything goes well at the start, but he can be sure that he is going to crash to the ground'. [12] Rueff met de Gaulle several times between 1961 and 1965. These meetings, along with some personal history that de Gaulle shared with the US, finally had an impact on 4 February1965.

In a press conference on this particular day, de Gaulle went all guns blazing against the Bretton Woods financial system, in general, and the US dollar, in particular. He said that the Bretton Woods system had become 'abusive and dangerous', and that the US dollar being at the heart of the arrangement allowed the US to 'indebt itself freely to foreign countries' and to 'expropriate foreign businesses and to export its military power'.[13]

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One of the reasons dollars were flooding into Europe was the fact that American businesses had been setting up shop in various countries in Europe, including France. A part of their strategy in order to seek entry into the European market was to buy European companies. This had not gone down too well with the French. In January 1963, Chrysler had acquired a controlling interest in the Simca Motor Company, one of the largest automobile manufacturers in France. Another piece of news floating around was that Libby, McNeill and Libby of Chicago, a company in the business of canned food, was planning to take over 50,000 acres of land in the Languedoc region of southern France to

build a processing plant.[14]

A little earlier, in 1962, General Motors had fired a number of French workers, leading to the perception among the French that the US had an undue influence over French economic affairs.[15] The French media called it the 'second invasion of France by the Americans'.[16] And so when de Gaulle spoke against the dollar, he was only reflecting the popular sentiment prevalent in France at the time. Also, France looked upon de Gaulle as the man who could restore French glory. General de Gaulle had reached the peak of his popularity in January 1960 when 72 per cent of the French citizens voted for him in a popularity poll. This was a year after he had become the president of the country. His popularity ratings fell to 44 per cent in December 1964. They rose again, to 65 per cent, after he had taken up cudgels against the US.[17]

Nevertheless, there was also a deeper point to what de Gaulle was trying to say while using the phrase 'expropriate foreign businesses'. As per the Bretton Woods system, other countries had to maintain stable exchange rates against the dollar, within a band of 1 per cent on either side. When dollars flooded into France, the French central bank had to keep buying them to ensure that the dollar did not lose its value against the franc. This ensured that the American dollars remained overvalued and the Americans were able to buy French businesses (or, for that matter, other European businesses) cheaply.

Let us try and understand this through the hypothetical example of a country called Utalia, which we shall assume was a European country and a member of the Bretton Woods Agreement. Let us also assume that \$1=2 utils, the currency of Utalia. As per the agreement, the value of the dollar could move within a range of 1 per cent on the either side, that is, a dollar could have a value anywhere between 1.98 utils and 2.02 utils. Now let us say that there was an influx of dollars into Utalia. Given the sudden increase in the volume of dollars, the dollar's value against the util should have gone down. But, as per the Bretton Woods system, the central bank of Utalia would have to intervene and ensure that the value of the dollar could not drop beyond 1.98 utils.

In order to ensure this, the central bank of Utalia would have to buy the dollars that were coming in by selling utils. This would lead to a situation wherein the excess dollars in the market would be sucked out and the value of utils against the dollar would be maintained.

Let us further assume, a different scenario wherein a free market was allowed to operate and there was no Bretton Woods system. In this scenario, the value of the dollar against the util would have fallen. Let us say that the value of the dollar against the util had crashed and one

dollar was now 25 per cent lower, or 1.5 utils. What would happen in such a scenario? A business which was worth 500,000 utils could have been earlier bought for $250,000 (500,000/2). The same business would now cost $333,333 (500,000/1.5), or 33 per cent more. But this scenario could not play out because the Bretton Woods system did not allow it.

The system allowed the dollar to be overvalued and, in this way, ensured that US companies could buy or, for that matter, set up businesses in Europe, rather cheaply. So de Gaulle felt that France was 'being submerged by monsters such as General Motors and IBM'.[18]

He felt the world should go back to gold because it had a 'nature that does not change and is held, eternally and universally, as the unalterable fiduciary value par excellence'.[19] The statement in support of gold was not made on the spur of the moment. France had been accumulating gold at the rate of 60–65 tonnes per month and by August 1966, it had reserves worth nearly $6 billion, of which 86 per cent or 4,585 tonnes was in gold. When it came to gold reserves, it had the second largest reserves in the world after the US.[20]

But over and above all these reasons of business was a personal issue which had probably been playing on de Gaulle's mind for nearly two decades. When the Second World War had started, de Gaulle was a virtually unknown two-star general who had managed to escape from Bordeaux in France and land at a British airport without any baggage. He had taken up the cause of the Free French Movement. On being asked why he had done so, he had replied, 'because no one else would do it'.[21]

After landing in Great Britain, he was engaged by the newly elected prime minister, Winston Churchill. But the Americans never warmed to him. This meant a series of snubs over the years and the final snub came when de Gaulle was not invited to the Yalta Conference, which started on 4 February 1945. Franklin Roosevelt, Winston Churchill and Joseph Stalin had met at Yalta, in southern Ukraine, on the north coast of the Black Sea, to settle the fate of Europe without inviting de Gaulle, who was by then the head of the provisional government of the French Republic.[22]

Twenty years later, on the same day and almost at the same hour at which the Yalta Conference had started, de Gaulle convened a press conference and pointed out the problems with the dollar and the Bretton Woods system.[23]

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By 1959, the growth in dollar reserves of some European countries had gone far ahead of their desire for additional dollars.

At the same time, the US had become increasingly fearful about these 'extra' dollars being exchanged for gold.[24] There was also the fear that the extra dollars floating around would drive up the price of gold in the London gold market. While citizens of the US were not allowed to hold gold, there was no such ban operating in other countries.

In October 1959, prices in the London gold market touched $40 per ounce. This was a year before the US presidential elections, in which the Democrat John Fitzgerald Kennedy would take on the Republican Richard Nixon. While Kennedy made it clear before the elections that he had absolutely no intention of devaluing the dollar (increasing the price of gold in dollar terms), the market was thinking in a different way. The last time a Democrat replaced a Republican, one of the first presidential actions had been to raise the price of gold from $20.67 per ounce to $35 per ounce.[25]

The price of $40 per ounce of gold was brought down to its official price of $35 per ounce after a coordinated selling of gold carried out by the European central banks as well as the Bank of England.[26] Any rise in the price of gold in the private market could have been a problem as central banks from various countries could have converted their dollars into gold at the Federal Reserve of the US and then sold that gold in the London market at a higher price. They could have taken the dollars they had got by selling the gold in London, exchanged them for more gold from the Federal Reserve and sold it again in the London market. This process could have been repeated ad infinitum. Theoretically, it was possible for the US to run out of all the gold it had. In 1961, the US thought of addressing this prospective problem by proposing a 'Gold Pool', which would be a consortium of various central banks. The consortium would buy or sell gold as per the need to ensure that the price of gold remained fixed at $35 per ounce in the private London market. The US was supposed to provide 50 per cent of this gold, with the remaining gold coming from seven European central banks.[27] The Gold Pool remained an arrangement which could be activated when necessary. Till 1964, gold from the Soviet Union and South African mines kept coming into the market and kept the price of gold more or less constant. But by the start of 1965, gold supplies fell, and the Gold Pool had to be activated to sell gold in the London market to ensure that the price of gold stayed at $35 per ounce.[28] Till March 1968, the sale of gold made from the Gold Pool ensured that the price of gold in the London market remained at $35 per ounce. The Gold Pool, led by the

US, dumped around $25 billion in total in the London gold market to arrest the price of gold at $35 per ounce. The cartel collapsed on 17 March 1968.[29] Since November 1967, the Gold Pool had gone on an overdrive and a total of $3 billion worth of gold had been sold to keep the price of gold stable. In fact, on 14 March 1968 alone, $400 million worth of gold was sold by the central banks in the London market.[30]

The system collapsed because member countries started working against it. The arrangement called for central banks of countries other than the US to contribute 50 per cent of the total gold required to maintain the fixed price, but the central banks were not ready to continue sharing costs indefinitely. This explains to a large extent why the US had contributed $2.2 billion of the total of $3 billion worth of gold that was sold on the London gold market by the Gold Pool between November 1967 and March 1968. Also, there was nothing that stopped other European countries which were a part of the Gold Pool from offsetting their contributions by converting their dollars into gold by presenting them to the Federal Reserve.[31]

Italy tried maintaining the level of its gold reserves by first contributing to the Gold Pool and then offsetting that contribution, by converting the dollars that it held into gold in the US. France dropped out of the pool in 1967.[32]

As mentioned earlier, the Gold Pool had sold around $400 million worth of gold on 14 March 1968 to keep the price of gold stable. This was when American authorities had had enough of trying to manage the price of gold. They decided to shut shop a few days later. The amount of money coming in to buy gold was far too much and all the selling of gold in the London gold market by the Gold Pool was not helping much.

The US treasury officials called their counterparts in Great Britain to shut down the London gold market, which, due to Britain's past, was still the main trading centre when it came to gold. Closing the London gold market required a proclamation from the queen. Harold Macmillan, then prime minister, got this done by visiting Queen Elizabeth around midnight and getting her consent. Charles de Gaulle on the other hand decided to keep the Paris bourse where gold could also be bought and sold open.[33]

An emergency meeting of the countries which were members of the Gold Pool was called. After two days of tough negotiations, the US as well as the European countries agreed to the proposal put forward by Guido Carli, the governor of the central bank of Italy. Carli proposed a two-tier market, wherein central banks and governments around the

world would sell gold to each other at the official price of $35 per ounce and, at the same time, allow the free market in gold to operate.[34]

After this, the danger that the US had envisaged became real: countries could convert their dollars into gold in the US and then sell that gold in the London market. But there was a 'Gentleman's Agreement' among members. It was agreed upon by central banks that they would not convert their existing dollar balances into gold. But they remained free to convert the additional dollars that they earned from the start of 1968 into gold.[35] This kept the Bretton Woods system going, at least for a while.

Very soon the price of gold in the private market in London took off and reached a high of $42 per ounce. Soon, gold from South Africa hit the market and the price came back to the official price of $35 per ounce.[36]

Speculators were of the opinion that the dollar would soon be devalued officially, that is, the per ounce price of gold in dollars would be increased. This theory was logical in the light of the falling gold reserves of the US. As mentioned earlier, the French had been converting their dollars into gold even before de Gaulle's spirited attack on the dollar and the Bretton Woods system.

In March 1961, the world monetary gold reserves stood at $41.6 billion. Of this, the US accounted for $17.4 billion. When the French started redeeming their dollars into gold in the first three months of 1962, the US gold stock was worth $16.8 billion. The French redemption reached a high in the third quarter of 1966. Of the $3.3 billion converted into gold in the US, the French had converted $2.8 billion. By December 1967, the world gold stock had stayed where it was, whereas the US gold stock had fallen to $12 billion.[37]

Speculators were of the opinion that the US would increase the price of gold in order to keep the Bretton Woods system going. If the US had set the price of gold at $70 per ounce in December 1967, its gold stock would have automatically doubled to $24 billion from the $12 billion it had when gold was valued at $35 per ounce.

The conversions of dollars into gold continued after the Gold Pool broke down. In 1969, forty-six countries converted their dollars into gold. A year later, in 1970, more than sixty countries converted $630 million into gold.[38] By the start of 1969, the US gold reserves were down to around $10 billion.[39]

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In the 1960s, the US was running a 'budget deficit'. This was primarily because of the 'Guns and Butter' budgets that were being run by the American politicians of the day.

The word 'gun' was in reference to the war that the US was fighting in Vietnam, and the word 'butter' was in reference to social programmes designed to achieve very low unemployment and redistribution of income.

Between 1961 and 1963, government expenditure was more than its income. This was primarily on account of a fall in tax collections due to which planned surpluses became deficits. The deficits for the next two years, that is, 1964 and 1965, were partly reversed due to a booming economy, which added $82.8 billion, or 14 per cent to the GNP during the period.[40]

The involvement of the US in Vietnam started increasing in the early 1960s, with the number of troops in the country tripling in 1961 and then tripling again in 1962.[41] In 1965, the US started sending combat units into Vietnam and that meant that its expenses in continuing the war were increasing.

In 1966, for the first time, the cost of the Vietnam War was shown separately in the annual budget. Around $4.7 billion had been spent that year to keep the war in Vietnam going. For the next year, $10.5 billion was supposed to be spent in Vietnam. The Vietnam expenditure was a part of the $60.5 billion that the US had allocated towards its total defence expenditure for 1967.[42] Of this, a reasonable amount of money would go towards maintaining and running American military bases outside the US. The US government was running a budget deficit to finance its war in Vietnam and to maintain a global military presence. This deficit was adding to the dollar surplus all over the world.

Robert McNamara was the president of Ford Motor Company before becoming the defence secretary of the US in 1961. He stayed on till 1968 and was largely responsible for escalating America's role in Vietnam. In 1965, he put out an estimate, pointing out that winning the war in Vietnam would require 500,000 troops and five years of fighting. In his later years, Robert McNamara would claim that he knew as far back as 1964 that Vietnam was a lost cause. What the US needed at that point of time was to acknowledge that a mistake had been made and get out of Vietnam. But that remained easier said than done.

As William Bonner and Addison Wiggin write in *Empire of Debt – The Rise of An Epic Financial Crisis*:

> It is the courage that is most lacking in times of war. Men would

> rather die than admit that they are doing an asinine and a pointless thing … The Vietnam War was not merely a tragedy: or even a crime. It was a farce. American troops had been sent to kill people they didn't know, in a country they had never been to, for reasons none of them could understand, by men as benighted as they were.[43]

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This was an era in which the economics of Keynes had come to dominate the world. Politicians had taken his argument and twisted it to suit their needs.

As we have seen earlier, Keynes believed that the government budget should be balanced on an average. This meant that during years in which the economy was doing well, the government should run surpluses. But when the economy was not doing well, the government should spend more than it earns, run a budget deficit, and stimulate economic growth.

The politicians just ran with one part of the argument. They believed in running budget deficits when times were bad or even when things were looking a little worse. Along the way, they conveniently forgot that Keynes had also talked about running budget surpluses when times were good.

As Adam Smith puts it in *Paper Money*, 'The doctrine led to expectations; government could move against the business cycle, flatten out its perilous peaks and dreadful valleys, bring prosperity back when prosperity departed.' [44]

This twisted interpretation of Keynes made budget deficits fashionable. Also, in the 1960s, America began to take rapid economic growth for granted. After the election of Lyndon B. Johnson as president in 1964, both the monetary policy and the fiscal policy in the US became expansive.[45] This meant that the interest rates were low and the government ran a budget deficit to keep the rapid economic growth and the war in Vietnam going. The side effect of this was that the world got flooded with more and more dollars, making the entire Bretton Woods system very fragile.

So caught up was the US with the distorted Keynesian philosophy that between 1960 and 1976, it had only two years of budget surplus. During this period, the deficits averaged around 42 per cent of the total expenditures.[46] The average annual budget deficit for the period stood at around $14 billion.[47]

Henry Hazlitt explained this fetish of wanting to run budget deficits beautifully:

> It goes on because politicians (partly through the second or third-hand influence of the theories of the late Lord Keynes) think that this is the way, and the only way, to maintain 'full employment', the present-day fetish of the self-styled progressives.[48]

The evidence though was to the contrary. In 1969, when there was a budget surplus of $3.24 billion, unemployment was at its lowest level of 3.5 per cent, during the entire period from 1960 to 1976.[49]

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Without having an impact on unemployment, these budget deficits led to an increase in the money supply in the economy. Between 1967 and 1972, the money supply in the US went up by around 50 per cent, leading to a 25 per cent increase in prices.[50] Towards the end of the 1960s, the rate of increase of money supply became quite rapid as the US ramped up the printing press to churn out the dollars required to finance the Vietnam War. In April 1968, the money supply in the US stood at $184.3 billion. By the end of August 1968, it had gone up to $190.1billion, an increase of $5.8 billion or over 9 per cent on an annualized basis. This rate of increase was three times the rate of increase in money supply that had been seen during the period 1957–66.[51]

What was worse was that the US money supply had constantly been expanding since 1941, when it had entered the Second World War. Between 1941 and 1971, the money supply had expanded more than eight times, leading to prices going up and the dollar losing its purchasing power. By 1971, a dollar was worth only 35 cents in terms of the purchasing power it had in 1940.[52]All countries which were holding on to dollar reserves were essentially holding on to an asset which was constantly losing value. The option they had before them was to convert their dollar holdings into gold. But doing that in excess would bring the international financial system to the verge of a collapse. In fact, the only reason the system did not collapse in the 1960s was that countries with vast dollar reserves did not exercise their legal right to present them to the US and exchange them for gold.[53] Germany was one such country and perhaps the only one which restrained from converting its dollar reserves into gold.[54]

This was made clear in a letter written on 30 March 1967, by Karl Blessing, president of the Bundesbank, the central bank of West Germany, to William McChesney Martin, the chairman of the Federal Reserve. In this letter, Blessing essentially assured Martin that the Bundesbank would continue following its policy of not converting American dollars into gold.[55]

France, another big holder of dollar reserves, had no such reservations and converted $884 million in 1965 and another $601 million in 1966. A few other countries, like Belgium and the Netherlands, which were a part of the 'Gentleman's Agreement' of 1968, converted their dollars into gold in 1970.[56]

Other chinks in the Bretton Woods system had also developed. The British pound, which had been the premier currency in the world before the Second World War, was under tremendous pressure. At the end of the Second World War, the combined holdings of the British pound by all central banks around the world stood at $10 billion. This was two-and-a-half times more than the dollar reserves of $4 billion held by the central banks at that point of time.[57]

With the rise of the Bretton Woods system, the dollar became the premier currency of the world and the share of the British pound in the international reserves held by countries around the world slowly started to come down. But even in 1965, the British pound comprised nearly 26 per cent of the total global reserves. Also, the US and Great Britain were sailing in the same boat with regard to their deficits. The number of pounds going outside Great Britain was greater than the amount coming back to it. The country had what is known as a balance of payments deficit, or, simply put, a pound deficit, which had been deteriorating since the early 1960s. This deficit became sharply negative in 1964. While countries all over the world had an incentive in keeping dollar reserves, there was no such incentive with the pound. The dollar was convertible into gold; the pound was not. There was great selling pressure on the pound and that led to three minor crises between 1964 and 1966.[58]

As per the Bretton Woods system, one pound was worth $2.80 and the value of the pound against the dollar had to fluctuate within 1 per cent of this value in Great Britain. When central banks and investors sold pounds in London and bought dollars, this put pressure on the pound. If the markets were allowed to operate freely, the pound would have lost value against the dollar because the market was flooded with pounds.

To maintain the value of the pound, the Bank of England had to buy

these pounds being sold by selling the dollars it had in its vaults as reserves. The trouble was that its supply of dollars was not unlimited, unlike the case of the US. There were only so many dollars it could sell to maintain the value of the pound against the dollar. If it kept selling dollars, the chances were that it would run out of them. Help came in the form of dollar loans from the Federal Reserve Bank of New York.[59]

When the Suez Canal in Egypt was closed during the Six Day War (5 to 10 June 1967) between the Arabs and Israel, another round of selling of the British pound started. And this time, the British could not hold on and the pound was formally devalued. A single pound was now deemed to be worth $2.4, or 14.3 per cent lower in comparison to the earlier $2.8.[60]

This happened on 18 November 1967 and was the first main crack in the Bretton Woods system, which was built around the idea of fixed exchange rates.

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The dollar deficit that the US ran with the rest of the world kept increasing. In the year 1969, it stood at $16 billion. For the next two years, it stood at $22 billion and $14 billion. In comparison, this deficit had averaged to around $3 billion per year over the previous ten years.[61]

What this did was that countries had to keep piling up dollars, in order to maintain their exchange rate against the dollar. By late 1970, the foreign exchange reserves of Germany had touched nearly $13.5 billion, almost twice of what they had been at the beginning of the year.[62]

The accumulation of dollar reserves around the world had already led to an increase in money supply in these countries. The money supply in the G-9 countries (G-10 countries minus the US) had increased at a rapid rate of 9.1 per cent a year, between 1962 and 1969. In comparison, the US money supply during the same period had only increased by 4.9 per cent. As we have seen earlier, an increase in dollar supply led to an increase in money supply in the countries in which the dollars landed up. Between 1970 and 1972, the world money supply went through the roof. The G-10 countries' money supply rose from $416 billion to $632 billion.[63]

This happened because the US, which was a member of the G-10, ramped up money supply, leading to the world being flooded with dollars. The central banks of these countries had to buy these dollars in order to maintain their exchange rates against the dollar. This was done

by selling their respective currencies and, thus, increasing the money supply in those countries as well.

In time, the flood of dollars in a country like Germany was so great that it became difficult to maintain the exchange rate of the Deutschmark against the dollar. By 3 May 1971, suggestions were being made by some of the leading economic institutes in Germany that the Deutschmark should be revalued and increased in value against the dollar. And this turned what was till then a flood of dollars into a tsunami. Over the next two days, the foreign exchange market in Germany saw $2 billion coming in. On 5 May 1971, German authorities had to shut down the foreign exchange market within forty minutes of opening it after nearly a billion dollars came into Germany during that time.[64]

What was happening here? Investors were selling dollars and buying the Deutschmark in the hope of profiting from the revaluation of the Deutschmark that seemed to be on the cards. Let us go back to the fictional country of Utalia to understand this in a little more detail. As we saw earlier, $1=2 utils. Now say, there is a flood of dollars coming into the country and investors are selling dollars to buy utils. In the normal scheme of things, there would be a surfeit of dollars and a scarcity of utils, leading to utils gaining value against the dollar. But the Bretton Woods Agreement called for individual countries to maintain the value of their currencies against the dollar in their own foreign exchange market within 1 per cent of the decided rate. The value of a dollar against the util had to be in the range of 1.98 utils to 2.02 utils.

The central bank of Utalia would have to ensure that at any given point of time there are enough utils in the market. This could be done by buying dollars and flooding the market with utils.

Intervening in the market in this way, however, would mean that the central bank of Utalia was increasing the money supply and, hence, increasing the chances of inflation.

Given these reasons, beyond a point, any central bank had to allow the market forces to operate and let the currencies find their right value against each other.

Also, there was money to be made in this process by investors. Say, for example, with a flood of dollars coming into Utalia, the central bank decided to revalue the util against the dollar. One dollar was now worth 1.5 utils. An investor who had foreseen this and entered the foreign exchange market when 1 dollar was 2 utils would make money in the process.

Let us say, the investor had sold a million dollars. He would have

received two million utils in return, given that 1 dollar was worth 2 utils. Now with 1 dollar being worth 1.5 utils, the same investor could exchange the two million utils for $1.33 million (2 million/1.5). This would have meant clear gain of 33 per cent for the investor in a very short period of time, just by betting correctly.

Following this pattern, the dollar had also been flowing into other countries in Europe. Around $600 million had gone into Switzerland, $300 million into France, $240 million into Holland, and around $100 million each into Belgium and Great Britain.[65]

There was a problem of a surfeit of dollars and it needed to be tackled. On 6 May 1971, the German, Dutch, Belgian, Swiss, and Austrian foreign exchange markets shut down, though the British and French markets remained open. When the markets reopened, the Swiss and the Austrians had let their currencies float. France had forbidden its citizens from dealing in foreign currency except through the French central bank, the Bank of France.

The Germans too had gone ahead and broken the value of the Deutschmark against everything else, that is, they had let their currency float.[66]

The value of the Deutschmark against the dollar and all other currencies would now be decided by the foreign exchange market and would thus keep changing. The central bank would no longer intervene to keep the value of the Deutschmark against the dollar constant, as required by the Bretton Woods Agreement.

This was primarily because the surfeit of dollars had led to an increase in the money supply and overall lending in the German economy. When the German government had tried to rein in the growing amount of loans in 1970–71 by raising interest rates, German companies had simply turned to borrowing from the huge Eurodollar market. By doing this, they had ended up borrowing more than the entire credit created by the German banking system. The German central bank was a big player in the Eurodollar market and in a way it was indirectly providing funds to the German companies even though it did not want to do so.[67]

By breaking the link with the dollar, the Germans would not have to keep buying dollars in order to maintain the value of their currency. This would ensure that the money supply in Germany would not go up. Also, with fewer dollars in its coffers, the German central bank would not have to park its funds in the Eurodollar market and hence, indirectly provide money to the German companies. With this move, one of the central tenets of the Bretton Woods system, that the value of currencies

against each other should be constant, was broken.

As more dollars went out into the world, the amount of gold that the US had backing those dollars became far less. In fact, the treasury department of the US revealed on 14 May1971 that the stock of gold had fallen to its lowest levels since 1936. It was just above the $10 billion mark, or around one-fifth of the dollars outstanding outside the US. At the same time, the dollar deficit that the US had with the rest of the world was running at twice the rate of the record deficit in 1970.[68]

This record deficit had led to more European countries demanding that their dollars be converted into gold. In March 1971, the French demanded $282 million to be converted into gold on the pretext that they had to pay the IMF. Switzerland asked for $75 million, and Holland and Belgium asked for $55 million and $80 million, to be converted into gold, respectively. Even the Germans, who had rarely demanded that their dollars be converted into gold, primarily because Americans gave them security against the Soviet Union, wanted $500 million to be converted into gold. But this request was dropped once the information was leaked to the press.[69]

The final nail in the Bretton Woods coffin came on 13 August 1971, when even the British asked for $2 billion to be converted into gold, to protect themselves from any prospective devaluation.[70]

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The end came on 15 August 1971, when Richard Nixon decided that the link between gold and the dollar needed to be temporarily suspended. He had to decide whether or not to interrupt the 9 p.m. screening of the widely popular show *Bonanza*, which had been running since 1959 and was into its twelfth season, to make the announcement. The weekly show revolved around the Cartwright family, which had a thrice-widowed patriarch as its head. The patriarch had three sons, one each from his three wives. As the economist William Bonner put it in a column he wrote on the fortieth anniversary of the link between gold and the dollar being suspended, 'Since *Bonanza* was much more popular than Richard Nixon, the president hesitated to interrupt it.'[71]

But it was decided that the show would be interrupted after all. In the speech Richard Nixon said: 'I have directed Secretary Connally to suspend temporarily the convertibility of the dollar into gold.' This statement meant that central banks all over the world would no longer be able to convert their dollars into gold.

What was interesting was that Nixon's speech of 2,481 words used

the word *gold* only once. The main announcement of breaking the link between gold and the dollar came halfway through the speech. And to make the announcement look like an assertion of strength, which it clearly was not, Nixon and his team dressed it up as a '… time … for a new economic policy for the United States'.[72]

Other than delinking the dollar from gold, the president imposed an additional tax of 10 per cent on all goods imported into the US. An excise duty cut of 10 per cent on cars, leading to a reduction of $200 on an average in each car's price, was also announced.[73]

Nixon hoped that with cars getting cheaper, Americans would buy more cars and that for every 100,000 cars sold, 25,000 new jobs would be created. These new jobs were essential for tackling unemployment. Two million army men had been released into the workforce after the US had started to scale down the intensity of conflict in Vietnam. Those workers had to be put back to work.[74]

Even though the decision took a few years to settle down into public consciousness, Nixon could not possibly have done much more than what he did on that particular day in August 1971. As Henry Hazlitt put it in *From Bretton Woods to World Inflation: A Study of Causes and Consequences*:

> The result was that when President Nixon closed the American gold window on 15 August 1971, our gold reserves amounted to only about 2 per cent of our outstanding currency and demand and time bank deposits ($10,132 million of gold vs. $454,500 million of M2). In other words, there was only $2.23 in gold to redeem every $100 of paper promises. But this takes no account of outstanding 'Eurodollars', or even of the outstanding currency and bank deposits of all the foreign signatories to Bretton Woods. The ultimate gold reserves on which the conversion burden could legally fall under the system must have been only some small fraction of 1 per cent of the total paper obligations against them.'[75]

So, for every $100 of paper money outstanding, the US had less than $1 worth of gold, as per Hazlitt's calculations. This meant the Bretton Woods Agreement could not have been sustained any further.

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One suggestion that was repeatedly made to stop the Bretton Woods system from falling apart was devaluing the dollar against gold. This

meant increasing the price of gold in dollar terms. There were several theories put forward to arrive at a new price of gold. The US went on a gold standard in 1834. Wholesale prices between then and 1971 had risen three times. This meant that the gold could have been revalued at three times the price of gold in 1834. The price of gold in 1834 stood at $20.67 per ounce and accordingly three times that would have been $62 per ounce (or $62.01 to be very precise). Another logic put forward was that wholesale as well as consumer prices had risen by around 2.6 times since Roosevelt had increased the value of gold to $35 per ounce in 1934. The price of gold should also have been increased 2.6 times to $91 per ounce. Meeting these two values midway was the compromise that the gold price could have been an average of the two prices, $62 per ounce and $91 per ounce, and could have thus ranged between $75 and $80 per ounce.[76]

At $75 per ounce, the gold reserves of the US in 1969 would have been worth $11 billion more.[77] This would have given the US more breathing space. Earlier, it had to give out one ounce of gold for every $35 it received. If the value had been increased, it would then have had to give out an ounce for every $75 it received. Such a move would not have gone down well with countries that had huge dollar reserves.

Other than the US, the gold mine producers would also have benefited. They would have got 2.14 times higher price for their gold at $75 per ounce vis-à-vis the $35 per ounce that they were getting at that point, and they would have been likely to produce more gold.

But in recent years a counter-argument has developed which says that devaluing the dollar would also not have let the system function for long. It would have only delayed the inevitable. The argument put forward by Barry Eichengreen, one of the leading scholars on gold, runs like this. If the US had gone ahead and devalued the dollar, there would have been a run on its gold reserves. If the US had been prepared to devalue once, it would have been prepared to devalue again.[78] With every subsequent devaluation, countries which held dollar reserves would have got a lesser amount of gold. It would have made sense for them to have exchanged their dollars for gold immediately, after the first devaluation. And once that had happened, the Bretton Woods system would have crashed anyway.

As John Kenneth Galbraith writes in *Money – Whence It Came, Where It Went,* 'Men did not speak of the final abandonment of the gold standard. Instead it was said that the gold window had been closed. No one could get much excited about the closing of a window.'[79]

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As mentioned earlier, when Nixon temporarily cut the link between dollar and gold, John Connally was the treasury secretary of the US. Connally had been appointed as treasury secretary in February 1971. What made the appointment interesting was the fact that Nixon, a Republican, had cut across party lines and appointed Connally, a Democrat, as the secretary.[80]

Soon after taking over, Connally had famously told a group of European finance ministers, 'The dollar is our currency, but your problem.' He told the Europeans that the dollar problem would have to be solved by the Europeans contributing to the defence expenditure that the US had been making in Europe and opening their markets more to the US. If they did not do these things, then they should not be complaining about the dollar problem.[81] Connally's tone did not appeal to the conservative Europeans, and it only led to more countries demanding that their dollars be exchanged for gold.

But this is how he continued in his interactions with the other nations of the world even after the Bretton Woods system broke down. In an international conference organized in London under the auspices of the G-10, Connally told the member countries that the US was looking for its trade balance (the difference between exports and imports) to improve from a negative of $5 billion (i.e., its imports were more than its exports) to a positive of $8 billion (i.e., a situation wherein its exports would be more than its imports). Connally wanted a swing of $13 billion in the trade balance of the US and that too immediately.[82]

He told the delegates that it was up to them to come up with a plan and refused to engage in any further discussion. Connally continued with his aggressive Texan style and told the conference, 'We had a problem and we're sharing it with the world – just like we shared our prosperity. That's what friends are for.'[83]

Two weeks later, the countries met again, for the annual IMF meeting in Washington. The international financial system was still broken and no progress had been made.

The foreign exchange markets opened again on 23 August 1971, after the gold window was closed on 15 August 1971. The movements of the main currencies against the dollar were not very great. The only exception was the yen.[84] The yen immediately appreciated against the dollar by 7 per cent. On top of that, an import tax of 10 per cent had been implemented as well. This meant that Japanese imports coming into the US had become 17 per cent more expensive. This went down

well with the US steel and car producers, making them more competitive in price terms in comparison to the Japanese companies.[85] This was not surprising, given that for the first half of 1971, 70 per cent of the trade deficit that the US had with the rest of the world was with Japan.

Money was also coming into Japan because investors did not expect the Bretton Woods system to survive for long. And if that were to happen, the Japanese yen would appreciate against the dollar and it made sense for foreigners to pay off the debts they had in yen terms immediately. Between May 1971 and August 1971, the Japanese reserves rose to $3 billion as a lot of dollars came into Japan.[86]

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Once the Bretton Woods system broke down, things played out largely as expected, with the Japanese yen rising in value against the dollar, hurting Japanese exporters which was what the Americans wanted. By then, the Canadian trade minister had also estimated that the import tax of 10 per cent would destroy around 90,000 Canadian jobs.[87]

But Nixon and Connally were in no hurry to give up. They wanted to ensure that the dollar depreciated 12–15 per cent against other major currencies. This would have ensured that the imports into the US from other countries would have become expensive. People would have bought domestic goods. That would have meant more business for the local companies and, in the process, more jobs would have been created for the Vietnam War veterans.

Given that their exports to the US were hit, the G-9 countries were willing to play ball and ready to go along with the American condition of devaluing the dollar. But they had their own set of conditions. They wanted the US to do away with the 10 per cent import tax that it had implemented. Some of the European nations which had vast reserves of gold wanted the US to increase the price of gold in dollar terms, even though it was not convertible. This would have increased the value of the gold that nations like Germany and Japan had been hoarding over the years.

As James Rickards puts it in *Currency Wars*, 'This was symbolically important to the Europeans and would be seen by them as a defeat for the US in the currency war despite US indifference.'[88] With European countries largely agreeing to the devaluation of the dollar, Connally was also ready to talk. In a conference in Rome in early December 1971, he proposed an average revaluation of foreign currencies of 11 per cent against the dollar and at the same time devaluation of the dollar against

gold by 10 per cent. Both these measures taken together would have meant that the dollar would have got devalued by around 20 per cent against other currencies. Connally who had earlier asked for a $13 billion turnaround in the trade balance of the US was now willing to settle for a lot less at $9 billion. It was hoped that this would be achieved by devaluation of the dollar, which would lead to higher exports, as prices of American goods would fall in terms of other currencies, and lower imports, as the prices of foreign goods would increase in dollar terms.

The 10 per cent import tax impacted nearly 50 per cent of the $4.5 billion American imports.[89] The tax shocked most of the major trading partners of the US.

Meanwhile, negotiations continued when Richard Nixon met the French president Georges Pompidou in a sleep-deprived state, having watched an American football game for most of the night. Here, he agreed to meet the French demand of increasing the dollar price of gold. It was agreed that the US would propose to its Congress an increase in the price of gold to $38 per ounce, devaluing the dollar by 8.57 per cent.[90] Pompidou, on the other hand, agreed to work towards reducing the high tariffs that the imports from US faced in the European common market.

The European common market was a precursor to what is today's European Union and was originally created by the Treaty of Rome in 1957 with the aim of bringing closer economic cooperation among its members. Its original members were Belgium, France, Germany, Italy, the Netherlands and Luxembourg.

The foreign exchange market was also doing its bit. The average revaluation of the fourteen chief trading partners of the US had reached 7 per cent.[91] The market had taken care of a major portion of the 11 per cent revaluation that America had wanted with its trading partners.

The G-10 countries met three days later on 17 and 18 December 1971 at the historic Smithsonian Institute in Washington. In what came to be known as the Smithsonian Agreement, the currencies of various countries against the dollar were revalued by 8.57 per cent to 16.88 per cent. The dollar was devalued, which is what the Americans had been looking for, after they cut the link between dollar and gold. It was also agreed that unlike the trading band of the earlier 1 per cent, this time the currencies would be allowed to move within a band of 2.25 per cent on either side.

The dollar still remained unconvertible into gold. There was no plan or road map discussed on when the Western world could return to the

gold standard. As one writer put it after the conference, 'Instead of refusing to sell gold for $35 an ounce, the Treasury will simply refuse to sell … for $38 an ounce.' [92]

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The Smithsonian patch-up did not last long, even though Richard Nixon wanted the world to believe that it was the greatest monetary reform in the history of mankind.

The agreement did not last long because it had not done anything to address the issue at the heart of the problem, that is, the excess dollars going around. In 1972, the American dollar deficit with the rest of the world stood at $14 billion.

More and more dollars which were not convertible into gold were being churned out. In early 1972, Arthur Burns, the chairman of the Federal Reserve, who had made several public statements against inflation, started running an easy money policy, with the aim of reducing unemployment, boosting the economy and ensuring the re-election of Nixon.[93] The consumer price inflation in the US in 1971 stood at around 6 per cent.

Burns's easy money policy was directed towards the presidential elections scheduled for the end of the year. The money supply during 1972 went up by 10.6 per cent.[94] While the chairman of the Federal Reserve is supposed to be independent, this is hardly ever the case, given that he is appointed by the president of the time. Given the high inflation, investors started selling dollars and buying gold. In May 1972, the price of gold averaged $54.72 per ounce. By December of the same year it was averaging $63.91 per ounce.[95]

During the course of the entire year, the average market price of gold stood at $59 per ounce against the official price of $38 per ounce.[96]

Between 1969 and 1972, consumer prices in the US had gone up by 14 per cent. Hence, the purchasing power of the dollar had gone down. Given this, the dollar was now a weak currency, and it made sense for investors who could, to get out of the dollar and to be in stronger currencies, like the German mark, the Japanese yen and the Swiss franc.

As dollars flowed in, the European central banks started accumulating dollars like they had in the Bretton Woods system, in order to ensure that the value of their currency against the dollar fluctuated within the 2.25 per cent band on both the sides. The trouble was that just as they had been doing in the past, for every dollar they bought, they had to pump in their own currencies into their financial

systems. Further, they were now accumulating dollars which were not convertible into gold.

The idea of the Smithsonian Agreement, like the Bretton Woods Agreement before it, was to maintain fixed exchange rates between various currencies. The first crack in the Smithsonian system came on 23 June1972, when the British decided to float the pound. The pound immediately fell by 6 per cent.[97]

The reason for this devaluation was similar to that of the earlier devaluation in 1967. The pound had been facing selling pressure, and in order to maintain its value against the dollar, the Bank of England had to sell dollars and buy pounds. But it only had a limited amount of dollars, and beyond a point it was not possible to defend the pound. So Britain decided to float the pound.

The concern at this point of time was whether the British decision to float would have an impact on other countries, particularly Italy. 'I don't give a shit about the lira,' President Nixon is said to have remarked when his attention was drawn to Italy. This line was recorded on tape in a conversation which happened between Nixon and his chief of staff H.R. Haldeman on 23 June 1972, the same day that the British decided to let the pound float. During the course of this conversation, Nixon also approved the use of the Central Intelligence Agency (CIA) to block the Federal Bureau of Investigation (FBI) inquiry into the Watergate scandal.[98] This tape, along with other tapes, was released two years later in July 1974. On 29 June 1972, six days after the British let the pound float, Germany imposed capital controls. These included measures like requiring the prior approval of the Bundesbank, the German central bank, for purchase of domestic bonds by non-residents.[99] The reason for this was that the German central bank had accumulated enough dollars and was no longer in the mood to continue doing so. It was trying to discourage people from continuing to get dollars into Germany. Soon other countries like Canada, Japan and Switzerland also imposed capital controls.

The US continued to run a dollar deficit with the rest of the world. Gradually a realization started setting into the rest of the world that if they remained committed to fixed exchange rates they would also have to get used to high rates of inflation that the US had chosen.

Despite the capital controls applied by countries all over the world to discourage the flow of dollars into their respective domains, the flow of dollars continued. In January 1973, Switzerland decided that the government would not intervene to maintain the value between the dollar and the Swiss franc, as per the Smithsonian Agreement. The Swiss

franc was allowed to float.

On 10 February 1973, Japan decided to close its foreign exchange market and stop any further support for the dollar.[100] Very soon, Japan also let the yen float; this, after the Americans had been asking for a yen revaluation of 20–25 per cent. The Japanese instead went in for a full float. Italians soon joined the show and decided to float the lira.[101] And so did Ireland with its pound and Canada with its dollar.[102] The other European governments followed suit and in the spring of 1973, the Smithsonian Agreement met the same fate as its more famous predecessor, the Bretton Woods Agreement.

To take care of the dollar deficit, the US proposed a new gold–dollar rate of $42.22 per ounce in early 1973. But by then things had gone too far. The dollar price being proposed per ounce of gold was nowhere near the real price. For the year 1973, the annual gold price averaged at $97.84 per ounce.[103] Currencies were now free to move against one another. The last link that paper money had with gold was cut. The US was now free to print as many dollars as it wanted to because dollars were no longer convertible into gold. As Craig Karmin writes in *Biography of the Dollar – How the Mighty Buck Conquered the World and Why It's Under Siege*:

> No longer constrained by the finite supply of bullion [gold], the United States could now print more dollars than ever before, and it could borrow more money through the Treasury bond market than ever before.[104]

The aforementioned line explains more or less everything that has happened since then, as we shall see in the pages to come. In fact, the Americans had understood the value of this statement even before the Bretton Woods system had been put to rest. The money supply in America rose by a whopping 88 per cent between 1969 and 1976. Consumer price inflation during the same period rose by 58 per cent. Let us look at the period starting August 1971. Wholesale prices in the month of August 1971 had fallen by 2 per cent in comparison to the same period the year before. By August 1972, prices had gone up by 4.35 per cent. By now the connection between dollar and gold was gone. Between 1972 and 1973, prices rose by 13 per cent, and between 1972 and 1974, prices rose by 34 per cent.[105]

The dollar and inflation had both been set free. What had also been set free was the price of gold. The price in the London gold market had been different from the official price of gold since the Gold Pool broke

up in 1968. Between 1968 and 1971, the average price of gold had gone up from $38.94 per ounce to $41.07 per ounce. But after 1971, the price of gold simply took off and by 1980 the average price of gold for the year was at $614.61 per ounce.

Satyajit Das describes this era best in his book *Extreme Money – Masters of the Universe and the Cult of Risk*:

> Max Weber, the father of social science, defined the state as the agency that successfully monopolizes the legitimate use of force. Now the state, through its monopoly over the printing presses, controlled money and the economy. Money would be henceforth a matter of pure trust. American dollars still bear the words: 'In God We Trust'. But God was not directly responsible for control of money; it was governments and central banks … Some found the prospect of governments controlling money disturbing. In his study of human unconscious, Sigmund Freud noticed striking association between money and excrement: 'I read one day that the gold which the devil gave his victims turned regularly into excrement.' Many feared that governments would turn their money into human waste.'[106]

Interestingly, prices of almost everything went up in the early 1970s. The Reuters Commodity Index, which comprised food, fibres and minerals among other things, went up by 65 per cent from the end of 1971 to the spring of 1973. Only the price of oil did not rise.[107]

6

The American Promise

An estimate made in 2005 suggested that if the entire world consumed the same amount of oil that an average American did, the oil industry would have to produce 450 million barrels of oil a day, against the eighty-one million barrels a day it produced at that time. In such a scenario, the world's proven oil reserves would run out in a short period of just seven years. Similarly, if the world consumed oil at the same rate as Great Britain, global oil reserves would last seventeen years. For Hungary, this number worked out to thirty-four years and for China it was ninety-six years. India was at the bottom of the table at 226 years.[1]

The US consumes 25 per cent of the world's daily production of oil and half of its daily production of petrol, or what Americans call gasoline. The fact that it is using too much oil becomes even more glaring given that it has only 5 per cent of the world's population.[2]

The excessive consumption of oil started at the turn of the century when the first automobiles were made and Americans fell in love with them. William Durant was a pioneer who started General Motors (GM) in 1908 and within a span of around eighteen months bought twenty-five other automobile companies. He lost control of GM to banks that he owed money to, only to gain control a few years later. He lost control again in 1920 to Alfred Sloan. Sloan revolutionized GM. Earlier, Ford Motors, run by Henry Ford, had given the world the Model T, a cheap rugged car. The problem was that the Model T came only in one colour and that was black. Henry Ford loved to say, 'You could have any colour you wanted, so long as it was black.'[3]

Sloan took the automobile industry to the next level. He introduced variety to the market and made a car more than just a vehicle for

moving from one place to another. The idea of different models of cars with styling as a point of differentiation developed. He introduced loan schemes which helped Americans borrow money to buy cars. He also encouraged people to trade in their old car for a new one.[4]

These factors meant that the number of cars produced in Detroit, the hub of automobile production in the US, went up from 1.9 million in 1920 to 4.5 million in 1929. Things then came to a standstill as production was first hit by the Great Depression and gradually, automobile factories became busy producing planes, tanks and trucks for the Second World War. Renewed demand came after the end of the war in 1945. The production of cars doubled over the next ten years.[5]

The increased demand for cars also meant an increased demand for gasoline and, hence, oil. President Roosevelt realized that a regular supply of oil was very important for the well-being of the country. Immediately after attending the Yalta Conference, he travelled quietly to the USS *Quincy*, a ship anchored in the Red Sea. Here he met King Ibn Sa'ud of Saudi Arabia, the country which was by then home to the largest oil reserves in the world.

The American obsession with the automobile had led to a swift decline in its domestic reserves, even though it was the biggest producer of oil in the world at that point of time. The country needed to secure another source for an assured supply of oil. In return for access to the Saudi Arabian oil reserves, King Ibn Sa'ud was promised full American military support to the ruling clan of Sa'ud.[6]

The search for oil in Saudi Arabia was started by Americans. The Standard Oil Company of California (Socal) had paid 35,000 gold sovereigns to get an exploration concession in 1928. It is said that the sovereigns were counted one by one by Sheikh Abdullah Sulaiman, the finance minister of Ibn Sa'ud, himself. Socal struck oil nine years later in 1937, while drilling the oil well Dammam Number 7. After that, Socal partnered with other big oil companies such as Exxon, Mobil, and Texaco to form the Arabian-American Oil Company, or Aramco, as it later came to be known. The company discovered oil reserves running into an excess of 180 billion barrels over the next thirty years, which formed nearly 25 per cent of the known oil reserves of the world at that point of time.[7]

By the mid-1940s, American planners were coming to realize that their domestic oil reserves were going down. This was in stark contrast to all the oil that the US had in the early years of the twentieth-century. The state of Texas was throwing up so much oil during those days that oil sometimes sold at 10 cents a barrel (a barrel of oil equals 158.98

litres). Unlike today when only a few oil companies produce most of the oil, those were the days of heady competition. Companies even went to the extent of drilling into each other's designated areas. The low price of oil hit the smaller producers particularly hard. This was because the bigger producers had their own outlets for sale and did not feel as much of an impact.[8]

Some of the small companies were run by fairly rich men with good political connections who made political contributions. When they complained to the government, they were heard. At low price levels, there was excess production as well as wastage of oil. The state government heard the grievances of the oil producers and asked the Railroad Commission of Texas to regulate the production levels of oil but not its price.[9]

As the name suggests, the Railroad Commission used to regulate the railways prior to regulating oil. It gradually started regulating not only natural gas, oil and gas pipelines, but also bus lines and trucking systems.[10] The name of the commission though did not change.

The commission was not allowed to set the price of oil directly. When the demand for oil decreased, it gathered the industry together and inquired into the real demand for oil. After this, it set the rate of production, or the amount of oil to be produced over a number of days in a month. This, in a way, ensured that when the demand was down, the market was not flooded with oil and the price of oil controlled.

Gradually, the Texas price (known as the Gulf price, in reference to the oil produced in the Gulf of Mexico) became the American price and then the world price. America was producing half of the world's oil in the 1950s. American companies which were producing oil overseas, especially around the Persian Gulf, made enormous profits, given that oil was being produced at 10 cents a barrel and sold at a price of a few dollars per barrel. A lot of oil was being produced around the Persian Gulf but this oil did not come into the US. This was first secured through a 'Gentleman's Agreement' among American oil companies and then enforced by the American government. Interestingly, through the 1960s, when the oil produced in the Persian Gulf was sold to the world at $1.80 a barrel, the going American price of oil set by the Texas price was $3.45 per barrel.[11]

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While the US and the Persian Gulf were big producers of oil, another big producer of oil was Venezuela, which at that point of time had 7 per

cent of the world's oil reserves. In 1945, Juan Pablo Perez Alfonso took over as the minister of mines and hydrocarbons. He was of the opinion that oil was a finite resource for Venezuela and that it should be used in a proper manner. Soon after taking over as a minister, he sent for the chief engineer of the Railroad Commission of Texas to learn their oil conservation techniques. In 1948, there was a coup in Venezuela and Alfonso had to escape to the US. Here, he studied the way the Railroad Commission of Texas operated. By 1959, the military junta which had caused the coup had fled the country and Alfonso was back as the oil minister of Venezuela.

Once again, Alfonso sought expert advice from the Texans on the conservation of oil. His next step was to determine how Venezuela could get the best price for the oil that it produced. But the trouble was that the biggest oil companies of the world had got together and formed a cartel, and if they did not get oil at the price they wanted, they simply refused to buy oil from Venezuela and bought it from somewhere else.[12]

Taking all this into account, Alfonso designed a plan which would replicate the way the Railroad Commission of Texas operated, but at an international level. What if the major oil-producing nations of the world, like the oil companies in Texas, got together and decided how much to produce depending on the prevailing demand? If the demand was going to increase, they produced more, and if it was going down, they cut down on production. This would ensure that they would get a better price for the oil they produced. This was the crux of the idea.

Venezuela alone could not execute this plan. It needed the support of the countries around the Persian Gulf, which had by then started to be referred to as the Middle East. That was where most of the oil reserves were.

In April 1959, quite by chance, Alfonso happened to meet Abdullah Tariki, the director of the Office of Petroleum Affairs of Saudi Arabia. Tariki had problems of his own to deal with. International oil companies were going to cut prices and that was going to cost Saudi Arabia $34 million. Money coming out of oil was what kept the kingdom going, especially King Sa'ud and his many wives. The king would call on Aramco whenever he needed money and Tariki, a technocrat educated at the University of Texas, had to operate under such conditions. Any cut in the price of oil had him fuming. When Tariki and Alfonso met, Alfonso laid out his plan for the international version of the Railroad Commission of Texas.[13]

The two of them went around trying to convince the various oil-rich countries to join the international version of the Railroad Commission

of Texas. Finally, in a conference held at Baghdad from 10 to 14 September 1960, the Organization of the Petroleum Exporting Countries (OPEC) was formed. The five founding countries were Iran, Iraq, Kuwait and of course Saudi Arabia and Venezuela. They were soon joined by Qatar, Indonesia (which opted out in January 2009), Libya, the United Arab Emirates, Algeria and Nigeria. OPEC started with its headquarters in Geneva, Switzerland. On 1 September 1965, it moved its headquarters to Vienna, Austria.[14]

'We have formed a very exclusive club … Between us we control ninety per cent of crude exports to world markets, and we are now united. We are making history,' Alfonso remarked on the occasion.[15]

But through the 1960s, OPEC did not wield any influence on the oil price. The price of oil in the Persian Gulf was at $1.80 per barrel, but on many occasions, oil was sold at a price even lower than that.

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Even after having been around for a decade, OPEC was not able to have any impact on the price of oil because neither did it have the discipline to do so, nor did the market conditions allow it to have the necessary pricing power. OPEC tried to use oil as a weapon in 1967, when the Six Day War erupted between Israel on one side and Egypt, Syria and Jordan, on the other.

It tried to punish the Western world which was friendly towards Israel by cutting production by 1.5 million barrels a day. This did not have much impact because the US had some spare production capacity. These were oilfields which were ready to be operated but were not being operated at that point of time simply because the demand was not enough. By operating these oil fields, the US was able to increase the production of oil by one million barrels per day. Also, the OPEC members Venezuela and Iran, which were friendly towards the US at that point of time, increased their production and the cut did not have any impact on the price of oil.[16]

But OPEC's opportunity to influence the price of oil finally arose in 1970. By this time, the spare productive capacity in the US had declined to zero. The first person to take advantage of this was Colonel Gaddafi, who had seized power from King Idris of Libya in a bloodless coup on 1 September 1969. Idris had granted several concessions to oil companies operating in Libya.

In January 1970, a few months after coming to power, Gaddafi took the foreign oil companies head-on and demanded that the companies

pay 10 per cent more taxes and, at the same time, demanded 44 cents per barrel of oil as increased royalty. His argument was that Libya was very close to Europe and hence, it was cheaper to ship oil from Libya to Europe than from the Persian Gulf. Companies had to pay a cost for this convenience. He first threatened Occidental Petroleum, an independent oil-producing company which was the largest producer of oil in Libya. Given that it was an independent company largely dependent on the oil it produced in Libya, Occidental agreed to Gaddafi's demands.[17]

After Occidental caved in, Gaddafi went after the other independent oil producers and finally he went after Exxon. The oil companies approached the US government for help. The government refused to help them on the pretext that it had no control over Libya and that Gaddafi's demands were reasonable. With no government support, the companies had to agree to Gaddafi's demands. Once they had agreed to his demands, he made more of them.[18] The lack of support from the government was primarily because it wanted to keep the close relationship it had with the oil-producing countries in the Persian Gulf going.

The success of Libya in getting better terms from oil companies operating within the country was a huge embarrassment for other OPEC members. What they had not been able to do for more than ten years, Libya, a late entrant into OPEC, had done in just a few months. Finally, an agreement was signed between OPEC and the oil companies in Tehran on 14 February 1971. The countries would get 50 cents more per barrel of oil. The companies hoped that this increase would stay for a period of five years.[19] But that was not to be. A month after the agreement, Libya, which was not happy with the increase that came with the Tehran Agreement, negotiated and got a better price. This continued throughout 1971 and 1972. As soon as Libya demanded and got a price increase, the other members of OPEC did the same.[20] Western oil companies which had operated as a cartel for a very long time began to lose control over the price of oil.

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The Day of Atonement or Yom Kippur on 6 October 1973, the holiest day in the year for the Jews, coincided with the holy Muslim month of Ramadan. On this day, a coalition of Arab states led by Egypt and Syria launched a surprise attack on Israel. The forces from Egypt attacked Israel from across the Suez Canal. In a coordinated operation, the Syrian army attacked from the Golan Heights. Taken by surprise, Israel took

some time to react and the Arab states made some early gains. But within a week, Israel had turned the situation around, resisting an Egyptian attempt to break through the Sinai passes. By 15 October 1973, Israel was moving into the Egyptian side of the Suez Canal. On 19 October 1973, American Secretary of State Henry Kissinger put forward a $2.2 billion Israeli request for aid. This incensed King Faisal of Saudi Arabia and he announced an embargo on the shipment of oil to the US. The other Arab producers of OPEC soon followed suit.[21]

The price of oil thus increased from around $2.90 a barrel to $5.11 a barrel.[22] The members of OPEC met again in December 1973 in Tehran. Protesting against the US support of Israel during the Yom Kippur War, they temporarily embargoed oil exports altogether. This pushed the price of oil to more than $7 per barrel.[23]

The embargo came to be known as the 'Arab oil embargo'. The US could not raise its production by starting its spare production capacity because it no longer had any. It was importing 35 per cent of its oil requirement.[24]

At the same time, oil production in the US had crossed its peak level and would soon start to fall. In fact, the US output of oil dropped from 4.26 billion barrels in 1973 to 4.1 billion barrels in 1974 and then further to 3.96 billion barrels in 1975.[25]

Things had started to change in March 1971. The Railroad Commission of Texas set proration at 100 per cent for the first time. This meant that the Texas producers could produce all the oil they could from their oil wells and there was no limit, as had been the case since the commission had started deciding the rate of production. This was the time when the pricing power of oil finally shifted from the US to OPEC.[26] What OPEC did may seem like outright blackmail today; nevertheless, there was an economic reason to it as well.

In fact, it is safe to say that OPEC started raising the price of oil pretty late in the day. When the OPEC countries sold oil, they were paid in dollars. When they spent those dollars to pay for their imports, they had to pay more in dollars because the dollar had been losing value against other currencies.

As the value of the dollar depreciated against other currencies, the purchasing power of the OPEC countries went down. If the OPEC countries wanted to buy anything around the world in currencies like the German mark, the French franc or the Japanese yen, for that matter, they had to pay more dollars.

As mentioned earlier, the price of other commodities had gone up. The Reuters Commodity Index went up by 65 per cent between the end

of 1971 and the spring of 1973. While the price of oil had gone up a little since 1969, the rise had not been much and it was still selling at $2.90 per barrel in 1973. This, in a scenario where the dollar had been rapidly losing value against gold, as well as other major currencies such as the German mark and the Japanese yen. In fact, in the summer of 1973, after the collapse of the Smithsonian Agreement, a lot of money moved into the German mark, leading the Deutschmark to appreciate by 45 per cent against the dollar.[27] In order to maintain the same purchasing power, the OPEC countries had to increase the price of the oil they sold.

As William Greider writes in *Secrets of the Temple: How the Federal Reserve Runs the Country*:

> Oil trades worldwide in dollars and if the US was going to permit a free fall in the dollar's value, that meant the oil-producing nations would have received less and less real value for their commodity. The dollar had already lost one-third of its value in only half a dozen years and seemed headed towards an even steeper decline. In substantial measure, Saudi Arabia and the other OPEC nations were grabbing back what they had already lost.[28]

In January 1974, OPEC further raised the price of oil to $11.65 per barrel.[29] This was after OPEC's economic commission had determined that the price of oil should be $17 per barrel. It was around then that the economist Milton Friedman wrote in a column in the *Newsweek* magazine where he predicted that 'the Arabs … could not for long keep the price of crude at $10 a barrel'. For this prediction, Friedman was awarded the Booby Prize by the Association for the Promotion of Humor in International Affairs.[30] While making the forecast, Friedman, had ignored the first rule of forecasting, that is, give them a forecast or a date, but never both.

The oil embargo against the US was finally lifted on 18 March 1974.[31] But the seeds of inflation had been sown in the US, and inflation would remain high till the early 1980s. In fact, such was the impact of the hike in oil prices that in early 1974, the wholesale price index for inflation rose by 27.1 per cent, whereas the consumer price index for inflation rose by 13.3 per cent. To rein in the inflation, Arthur Burns, the chairman of Federal Reserve of the US, had to start raising interest rates, and by July 1974, the interest rate was at 13 per cent.[32]

High oil prices leading to high inflation and high interest rates led to

the Dow Jones Industrial Average falling by 45 per cent from 1,051 to 577 between 11 January1973 and 6 December 1974.[33] In 1974, unemployment peaked at 9.1 per cent in the US and the industrial production was down by 15 per cent.[34]

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The money supply in the US continued to increase, partly to pay for the more expensive oil. Between 1973 and 1976, the money supply increased by 33 per cent, leading to the consumer prices also increasing by around 31 per cent.[35] The price of crude oil ranged between $12.52 and $14.57 per barrel. Given the low demand because of the increase in price, the OPEC production of oil was also flat, at around thirty million barrels per day.[36] This meant that OPEC was operating at 35 per cent below capacity in 1975. But the price of oil did not fall primarily because the oil-consuming countries had by then been gripped by a fear that the world was entering a period of oil scarcity.[37] Other than increasing the money supply, the US continued to run a dollar and trade deficit with the rest of the world. In 1977, its trade deficit stood at $29 billion, whereas its dollar deficit stood at $20 billion. The budget deficit of the government for the years 1977 and 1978 stood at $60 billion.[38]

As had been the case in the past, there were too many dollars going around. It was not surprising that between January 1977 and April 1978, dollar depreciated more than 22 per cent against the Swiss franc and 6 per cent against the French franc. During the same time, it lost 21.5 per cent against the Japanese yen, 14 per cent against Deutschmark and 10 per cent against the British pound. This led to a lower purchasing power for the OPEC countries. The losses were especially greater for countries such as Algeria, Iran, Iraq, Indonesia, Kuwait, and Nigeria, which purchased more than 70 per cent of their imports from the Japanese and West European markets. For a country like Saudi Arabia, which held a substantial portion of its reserves in dollars, it meant the loss of the purchasing power of its reserves.[39]

The Arab producers within the OPEC had a great love for gold. Now that the dollar could not be converted into gold, they started to buy gold from the open market, driving up the price of the yellow metal. In 1973, the average price of gold was $97.84 per ounce. Five years later, in 1978, the average price of gold had gone up to $193.39 per ounce.

The OPEC started thinking about selling oil in several different currencies rather than only in dollars. Jahangir Amuzegar, who was an economist by training and had been a minister in the Government of

Iran as well as a negotiator for OPEC, outlined some of these proposals in a 1978 article. In this article, he outlined several currency combinations that could be used. Iraq, Qatar, the United Arab Emirates and Venezuela were in support of this plan.[40]

In fact, this was not the first time that such a plan had been discussed. In 1975, OPEC had almost decided at a meeting in Gabon to price oil in terms of Special Drawing Rights (SDRs).[41] The SDR was a notional currency, whose value was determined by a basket of the value of several currencies such as the German mark, the French franc, the British pound, the Japanese yen, and the US dollar. The idea was not to depend on one currency but a number of currencies and iron out any fluctuations in the value of one currency. But just at the point the decision was to be made, the value of the dollar against other currencies began to rise. This meant that the OPEC countries would get smaller dollar payments for the same value of exports if they were to price their oil in SDRs.[42] So OPEC continued to price their oil in dollars.

This discussion on pricing oil in terms of SDRs and a basket of different currencies was never made public. But the treasury department of the US had been informed about it. A third option that was discussed was to price OPEC oil in terms of a basket of currencies of the G-10 countries plus the currencies of Austria and Switzerland.[43]

After 1975, the dollar soon started losing value against other currencies. From December 1977 to September 1978, the purchasing power of OPEC's dollar-denominated oil fell by 40 per cent due to this.[44]

Moving to a basket of currencies at that point of time clearly made sense for OPEC as far as future revenues were concerned. As per estimates of the US treasury department, Saudi Arabia, the largest member of OPEC, would have been better off if it had priced oil in a basket of currencies instead of pricing it in dollars in all but eighteen months since 1973.[45]

So what was stopping Saudi Arabia and OPEC from moving to pricing oil in a basket of currencies rather than the dollar? As David E. Spiro writes in *The Hidden Hand of American Hegemony: Petrodollar Recycling and International Markets*:

> The Saudis, however, had the greatest proportion of dollar-denominated reserves in OPEC. This means that their reserves were diminished by the depreciation of the dollar (compared to the basket of their imports). But it also meant that they had the most to lose if a shift by OPEC to a basket of currencies threatened international confidence in the dollar. Having agreed

> to invest so much in dollars, the Saudis now shared a stake in maintaining the dollar as an international reserve currency. On the one hand dollars constituted 90% of Saudi government revenues in 1979, and those revenues were subject to the same fluctuations as the dollar. On the other hand, the Saudi investments were, roughly at the same time 83% dollar denominated. The choice was whether to stabilize current revenues by threatening the worth of all the past revenues (since invested in dollar assets).[46]

This meant that oil continued to be priced in dollars. A major reason for dollar continuing to be an international currency reserve despite losing value against all other currencies was the fact that oil was priced in dollars. If Saudi Arabia and OPEC decided to abandon the dollar, it would have meant that the demand for dollar would have come crashing down.

The US obviously understood that such a possibility existed. Since the early 1970s when Nixon was president of the US and Kissinger the Secretary of State, they were in conversation with Saudi Arabia to continue pricing oil in dollars. In the late 1970s, Werner Michael Blumenthal, who served as treasury secretary under Jimmy Carter, got into a secret agreement with Saudi Arabia which ensured that OPEC would continue pricing oil in dollars.[47] This was one of the biggest events in the modern history of money. It gave the dollar a new lease of life. If Saudi Arabia and OPEC had decided to dump the dollar in favour of a currency basket to price oil, the world may have been a very different place now.

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The question to ask is why OPEC went with what was best for Saudi Arabia. While OPEC has been regularly referred to as a cartel, it is important to understand that the structure of OPEC is different from that of a cartel. It is probably better to define the structure of OPEC as what economists call a 'leading firm' model of oligopoly, a market which is dominated by a small number of sellers and in which the largest producer sets the price and the others follow.[48]

Saudi Arabia was by far the largest producer within OPEC and, in the early 1980s, supplied almost 31 per cent of the total output. It also had the spare capacity to supply considerably more oil if it wanted to. Beyond this, it also had 39 per cent of the proven OPEC reserves. Within OPEC, it had the almost unquestioned support of what were

known as the sheikhdom states of Bahrain, Kuwait, the United Arab Emirates and Qatar. These countries faced threats from other OPEC members, like Iraq and Iran. For many years, Iraq had been eyeing Kuwait. It had tried to annex Kuwait in 1961 (and it tried again in the early 1990s). The support of Saudi Arabia, the largest nation in the region, was important for these countries.[49]

The sheikhdom countries along with Saudi Arabia were responsible for 50 per cent of OPEC's production and owned nearly 61 per cent of its proven reserves.[50] On their own, the Saudis controlled 15 per cent of the world's oil production and 25 per cent of its reserves. The entire idea of OPEC did not make any sense without them. When Saudi Arabia made the decision that OPEC oil would continue to be priced in dollars, the other countries did not have much of an option other than following what the largest member had decided.

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In the mid-1970s, OPEC was able to increase the price of oil twice by 10 per cent. It did so first in October 1975 and then again in December 1976. This was done under the pretext of maintaining the purchasing power of the OPEC countries as the dollar rapidly lost value against other currencies. But this was clearly not enough, and throughout 1978, calls were made for an even higher price of oil given that the dollar continued to lose value against other currencies.[51]

Experts were of the opinion that another 5–10 per cent increase in the price of oil was about to follow, but what followed was the second oil shock, that led to the price of oil reaching unimaginable levels. The price which had averaged a little over $10 a barrel in 1978 was quoting at more than $18 a barrel by the end of 1979. And by early 1981, it had risen fourfold and was quoting at nearly $40 a barrel.[52]

Iran was the second-largest producer of oil within OPEC. It produced around 7 per cent of the world's oil.[53] Trouble had been brewing in the country with citizens increasingly turning against the Shah of Iran, Muhammad Reza Pahlavi. The Shah had lost the support of the Shia clergy due to his focus on modernization, extension of voting rights to women, and the decidedly controversial decision of the recognition of Israel.

There were large public protests against the Shah in 1978. Strikes spread to the nationalized oil refineries in November 1978. This meant that production fell by 4.8 million barrels per day from a daily production of six million barrels.[54] The Shah left the country on 16

January 1979 on the advice of his prime minister. Two weeks later, the religious leader Ayatollah Khomeini, who had been out of Iran for fifteen years, came back and what followed was another steep rise in the price of oil.

While OPEC clearly set the price of oil in the world market for most of the 1970s, a spot market in oil had emerged in Rotterdam in Holland, where oil could be bought and sold. It comprised around 1–2 per cent of the world's total oil trade in the early 1970s. This oil was brought to Rotterdam by independent commercial operators who bought it directly from countries which produced oil. They expected to sell it for a higher price to independent oil refiners (i.e., companies which just had refineries and no oil wells to produce oil) or to those experiencing a temporary shortage of oil. Since oil in this market was sold as a result of free negotiation between two parties, its price could vary dramatically from the prevailing market price of oil.[55]

By 1978, this market had become slightly bigger and accounted for around 3–4 per cent of the total oil market. The size of the market had increased primarily because it was used by various OPEC countries to sell oil on the sly beyond what their OPEC production quotas entitled them to produce.[56] The spot market was never really supposed to determine the price of oil; it was only supposed to supply day-to-day purchases to those experiencing a shortage.[57]

The new regime in Iran, like Gaddafi before them, did not have any loyalties toward the existing way of doing things. Instead of selling oil to the international oil companies, as the previous government had, Iran started selling oil in the 'spot' market. What this meant was that the new Iranian government gave a higher priority to customers who wanted oil immediately as compared to the ones with whom the previous government had long-term contracts to supply oil at a predetermined price. On 14 May 1979, when the OPEC price of oil was $13.34 per barrel, Iran decided to sell to the spot market at $23 a barrel. Three days later, Iran had increased the price to $34 per barrel. The price in the spot market reached as high as $42 a barrel.[58]

Customers, including some of the biggest international oil companies, were queuing up to buy oil. As mentioned earlier, there was a fear of the world entering a period of great scarcity of oil. In April 1977, the CIA of the US had come up with a highly influential report which predicted that the growth of the world oil demand would soon outpace production. This was primarily because of constraints on the OPEC production. The Soviet Union, another big oil producer, would reach its peak soon. The report pointed out that by the mid-1980s, oil would become very scarce

and expensive.[59]

At that point of time, the report succeeded in generating sufficient paranoia among the oil-consuming nations as well as the big oil-producing companies. They wanted to buy as much oil as they could.

OPEC also used high prices on the spot market to raise its price to $23.50 per barrel of oil. But when the spot market price was higher than the OPEC price, there was bound to be some cheating. Libya and Algeria soon broke the $23.50 per barrel price set by OPEC. This led to a situation in which a lot of customers with long-term contracts were kept waiting for their oil, while OPEC tankers with oil were sent to the spot market in Rotterdam, where the prices offered were higher.[60]

Iran could not return to its production level of six million barrels per day. By September 1980 it was at war with Iraq and was producing only around 1.9 million barrels per day. The situation was precarious and oil analysts started talking about excessive oil prices which could range anywhere from $50 a barrel to $200 a barrel.[61]

The prices did not increase further because Saudi Arabia started producing more oil from the spare capacity it had. In 1980, Saudi Arabia produced 9.5 million barrels of oil a day. For a brief period after this, it increased this production to 10.5 million barrels of oil a day. For 1981, oil production in Saudi Arabia averaged at around 9.83 million barrels of oil per day.[62]

The Saudis did not like the idea of oil prices staying high for too long. At a higher price, alternative fuels would become viable and this in turn could mean less demand for Saudi oil.

All doomsday predictions regarding the price of oil turned out to be wrong. By 1983, the average OPEC price had fallen to $28 per barrel, leading to some members of OPEC offering additional hidden discounts in an attempt to boost their stagnating sales. A fall in prices had led to a total decline in OPEC's oil revenues by $100 billion, all in a period of three years from 1980 to 1983.[63]

Three years later, the price of oil was at $10 a barrel, proving the CIA prediction wrong. Milton Friedman was right about the price in the end. The price of oil would fall to $10 a barrel only in 1986.[64] And Friedman would write a 'I told you so' column in *Newsweek* on 10 March1986, confessing that 'Timing, as well as direction, is important … I had expected the price of oil to come down far sooner.'[65]

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The year was 1949. A Hollywood summer release of the year was a film

called *The Girl from Jones Beach*.[66] It did not set the box office on fire, but the film's hero soon moved to things other than acting, soon becoming a spokesperson for General Electric (GE). His political affiliations changed along the way, and he turned Republican. And with changed political affiliations, his political stardom rose. In 1967, he became the governor of California. On 20 January 1981, he was sworn in as the fortieth president of the US. The man was Ronald Reagan.

When Reagan assumed office, the American economy was not in the best of shape. Interest rates were high. So was inflation. The dollar was not going anywhere. Unemployment continued to remain high. Conventional economics held the view that some inflation was always good for employment, that there was an inverse relationship between the two.

This conclusion was based on the work of William Phillips, a New Zealand–born economist, who, in a 1958 research paper, observed a negative relationship between unemployment and the rate of change of wages (or to put it simply, the rate at which salaries rise) for the period 1861–1957, in Great Britain.

The logic offered by Phillips was that at lower rates of unemployment, companies would have to offer higher salaries in order to attract prospective employees. And higher salaries would mean higher wage inflation. This was twisted into the belief that higher inflation would mean lower unemployment, which is not exactly the same thing.

When the US began to experience high unemployment along with low economic growth and high inflation, it came as a surprise to many because it went against the prevailing economic theory.

This phenomenon was referred to as stagflation, that is, high inflation and low economic growth accompanied by high unemployment. The term stagflation was supposedly coined by British politician Iain Macleod on 15 November 1965.[67]

Even before the US experienced stagflation, economists like Milton Friedman had been talking about it. Keynesianism was the dominant economic force till about the mid-1970s. The bastardized version of Keynes' theory suggested that when the economy was not doing well, it made sense for the government to spend money on some projects even at the cost of running a budget deficit and thus putting some extra money in the hands of its citizens. This money would then be spent to buy goods and services, which would mean greater earnings for businesses. With increasing demand, chances were that businesses would hire workers and unemployment would reduce.

With more money spent, the chances were that some inflation would

be created. Rising prices would ensure that people spent their money today rather in the time to come, when it would have a much lower real value. Money spent on goods and services would mean an increase in demand for businesses, which would lead them to recruiting more people. So higher inflation would create more employment.

This is where the bastardized version of Phillips's theory met the bastardized version of Keynes' theory. But what economists like Friedman pointed out was that as soon as people started to realize that the government was trying to engineer some inflation in order to get people to spend their money, the game would be over. As William Bonner and Addison Wiggin explain in *Empire of Debt – The Rise of an Epic Financial Crisis*:

> Once the policy was known, people would adjust their behaviour to it, nullifying its effectiveness. They would not mistake inflation for greater demand: they would not increase production; they would not hire more workers; they would not spend more money.[68]

That is precisely what the US had been observing since the mid-1970s. The government had been running huge budget deficits, which had led to high inflation, and unemployment was going up instead of coming down.

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On 6 August 1979, about a year and a half before Ronald Reagan assumed charge as the president of the US, Paul Volcker took over as chairman of the US Federal Reserve. Volcker was referred to by the media as 'Tall Paul' (since he was over 6 feet tall). As the undersecretary of treasury for international monetary affairs, he had been instrumental in the process of the US going off the gold standard in 1971.

An economist at the Chase Manhattan Bank, he also had the experience of working on Wall Street. Before becoming the chairman of the Federal Reserve System, he was president of the Federal Reserve Bank of New York as well.

When Volcker assumed office, things were looking bad for the US on the inflation front. The rate of inflation was at 12 per cent and had been steadily increasing over the years.[69] Between 1964 and 1968, inflation had averaged 2.6 per cent per year. This had almost doubled to 5 per cent over the next four years, that is, 1969 to 1973. And it had increased to 8 per cent, between 1973 and 1978. In the first nine months of 1979,

it had averaged at 10.75 per cent. The US had not experienced such high inflation during a period of peace before.[70]

The price of gold in dollar terms had been rising very fast. On 6 August 1979, the day Volcker had started with his new job, the price of gold stood at $282.7 per ounce. At the end of the month, it stood at $315.1 per ounce. It had risen by a whopping 675 per cent during the period of eight years since 31 August 1971, around the time when the US had severed the link between dollar and gold.[71]

The world had clearly lost its faith in the dollar and the price of gold was rising very fast. By the end of September 1979, gold was at $397.25 per ounce, having gone up by 26 per cent in a month. On 21 January 1980, five-and-a-half months after Volcker assumed office, the price touched a then all-time high of $850 per ounce.[72]

In a period of five-and-a-half months, the price of gold had risen by an astonishing 200 per cent. What seemed like a mania for buying gold was essentially a mass decision to get out of the dollar. Volcker had to act fast given this instability of the dollar. After he took over, the first meeting of the Federal Open Market Committee (FOMC) was held on 14 August 1979. The FOMC was a committee within the Federal Reserve that decided the rate of interest. The members of the committee expressed their concerns about the inflation but they seemed uncertain on how to address it.

In September 1979, the FOMC raised interest rates. But it was a split vote of 4:3 within the seven-member committee, with Volcker casting his vote in favour of increasing the interest rates. The split vote sent out a confusing signal and the market had expected that the FOMC would not raise interest rates again to rein in inflation the next time it met.[73] This led to the price of gold going up by 26 per cent between the end of August and September. Investors were rushing in to buy gold to ensure that they did not lose any purchasing power on the wealth they had managed to accumulate.

This drove up the price of gold. On 6 October 1979, Volcker called a secret meeting of the FOMC. The data for the third-quarter (July to September 1979) growth of money supply, showed that it had been growing much faster than the rate targeted by the Federal Reserve. M1, a measure of money supply, had grown at an annual rate in excess of 9 per cent, while the Fed's targeted range was 1.5 to 4.5 per cent. Similarly, M2, another measure of money supply, had also grown at 12 per cent annual rate, compared to the targeted range of 5 to 8 per cent.[74]

This was the day when Volcker and the Federal Reserve decided to tie interest rates to money supply. The level of money supply would decide

the interest rate. The thinking was in line with what Milton Friedman had been talking about since the early 1960s. As Friedman wrote in *Money Mischief – Episodes in Monetary History*:

> The recognition that substantial inflation is always and everywhere a monetary phenomenon is only the beginning of an understanding of the cause and cure of inflation … Inflation occurs when the quantity of money rises appreciably more rapidly than output, and the more rapid the rise in the quantity of money per unit of output, the greater the rate of inflation. There is probably no other proposition in economics that is as well established as this one.[75]

Volcker was essentially putting Friedman speak into practice by trying to slow down the growth of money supply by linking it directly to interest rates, with the aim of slowing down inflation as well. This was a landmark decision in two ways. The first was that the world was now moving on from Keynes to Friedman. In the 31 December 1965 issue of *Time* magazine, Milton Friedman had been misquoted as saying, 'We are all Keynesians now.' Friedman later clarified in a letter to the magazine (in the edition dated 4 February 1966) that what he had said was, 'In one sense, we are all Keynesians now; in another, nobody is any longer a Keynesian.' [76]

With editors unable to resist the prospect of a great headline (even if misquoted!), 'We are all Keynesians now' hit the stands, and captured the prevalent economic thinking of that era.

This idea persisted and in January 1971, Richard Nixon sought inspiration from it when concerns were raised about the huge budget deficits, and declared, 'Now, I am a Keynesian.' [77]

Friedman had always been against big governments and for free markets. He had suggested in the past that the US Congress should pass a law and instruct the Federal Reserve to increase money supply at a fixed rate of 3 to 5 per cent every year. This would take away the decision making of the Federal Reserve out of the equation. By targeting money supply this way, inflation could be kept under control. The Federal Reserve did not go this far in trying to control the money supply, but they did take Friedman's basic idea of inflation always being a monetary phenomenon into consideration and tried to tackle it by linking money supply and the interest rate. This move by Volcker established that he was an independent man unlike the previous chairmen of the Federal Reserve who largely did what the president

wanted them to do.

In fact, when Arthur Burns (the guru of Milton Friedman) was appointed as chairman of the Federal Reserve on 30 January 1970, Nixon had remarked, 'I respect his independence. However, I hope that independently he will conclude that my views are the ones that should be followed.'[78]

Between the 1930s and 1950s, the Federal Reserve acted as a subordinate institution to the treasury department, and its monetary policy largely played second fiddle to the desire of the treasury department which was to continue raising money at low interest rates.[79]

The inaction of the Federal Reserve against inflation comes out very clearly from the fact that the federal funds rate in January 1977 was 75 basis points (one basis point is one hundredth of a percentage) higher than in January 1960. Inflation during the same period had gone up from 1.1 per cent to 6.1 per cent. The federal funds rate is the rate at which banks borrow or lend money that they have parked at the Federal Reserve to each other, largely on an overnight basis.

Volcker was not going to sit around doing nothing and came out all guns blazing to kill inflation, which by March 1980 had touched a high of 15 per cent. He kept increasing the interest rate till it had touched 20 per cent by January 1981. This had an impact on inflation which fell below 10 per cent in May and June 1981.[80]

The prime lending rate or the rate at which banks lend to their best customers had been greater than 20 per cent for most of 1981.[81] Increasing interest rates did have a negative impact on economic growth and led to a recession. In 1982, the unemployment rate crossed 10 per cent, the highest it had been since 1940, and nearly twelve million Americans lost their jobs. During the course of the same year, nearly 66,000 companies filed for bankruptcy, the highest since the Great Depression. And between 1981 and 1983, the economy lost $570 billion of output.[82]

But inflation was finally brought under control. By July 1982 it had more than halved from its high of 15 per cent in March 1980.[83] The steps taken by Volcker ensured that the inflation fell to 3.2 per cent by 1983.[84]

With this, the confidence in the US dollar also returned, and by July 1982, the price of gold was back to almost where it was when Volcker first assumed office. After achieving a high of $850 per ounce less than six months after Volcker assumed office in 1979, gold was back at $296.75 per ounce on 21 June 1982.[85] As inflation was brought under control, the dollar started to rise in value against other currencies

through much of 1981.[86]

In July 1982, Volcker cut interest rates for the first time, and by December 1982, he had slashed rates to 9 per cent.[87]

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A major reason behind the low interest rate scenario that prevailed in the US through the 1980s after Volcker managed to kill inflation was the accumulation of huge dollar reserves all over the world. The countries could either keep these dollars in their vaults or invest them somewhere. They ended up investing these dollars in bonds issued by the American government to finance its budget deficit.

It was ironic that in late 1960s, countries around the world had a problem holding dollars that were linked to gold, but now they were absolutely fine holding dollars that were not backed by anything. As Volcker said, 'People were more willing to hold dollars that were not backed by gold than they ever were willing to hold dollars that were backed by gold.'[88]

So huge was the demand for the bonds issued by the American government to finance its budget deficit that it could get away with offering a low rate of interest on the dollars despite the high budget deficit it had been running. The budget deficit had reached 3.9 per cent of the GDP in 1982. This was the highest since the end of the Second World War. It was higher three years later in 1985 and touched 5.9 per cent of the American GDP.[89] In fact, during Reagan's rule, the American government's debt rose from under a trillion dollars to $2.7 trillion.[90]

Reagan and Friedman were old friends. In the 1960s, Friedman had supported the tax cuts that Reagan had made as the governor of California. In the campaign for the presidential election of 1980, which Reagan went on to win, Friedman had served as his economic adviser.[91] Friedman was a supporter of free markets and a minimal role for the government. Reagan's thinking was heavily influenced by Friedman's ideas. As one author put it, 'He [Reagan] could not just resist Friedman's infectious enthusiasm and Reagan's eyes sparkled with delight every time he engaged in a dialogue with him.'[92]

A minimal role for the government also meant lower taxes. But lowering taxes required some economic logic. As Keynes said, 'Practical men, who believe themselves to be quite exempt from any intellectual influence, are usually the slaves of some defunct economist.' The economist of the season was Arthur Laffer, and his idea of the Laffer curve would come to the rescue. The Laffer curve is a theoretical

graphical representation of the link between the government revenue raised through taxes and the rate of taxation.

At a tax rate of zero per cent, the government will collect no tax. And the same will be true about a tax rate of 100 per cent, for the simple reason that no one will work willingly for an after tax income of zero. Between the income tax rates of zero per cent and 100 per cent there will be two tax rates that will collect the same amount of taxes, one with a high rate of tax on a small tax base and another on a low rate of tax but on a higher tax base.[93]

Effectively what Laffer was saying was that a high rate of tax can act as a negative and may not necessarily lead to high tax collections. On the other hand, a lower rate of tax could expand the tax base and get more people to pay their taxes honestly. A higher tax collection would mean a lower deficit.

It was Jude Wanniski writing in the *Wall Street Journal* in 1978 who came up with the term 'Laffer curve'. Wanniski recalled a dinner with Laffer in Washington in December 1974.[94]

A group was discussing President Ford's plan to Whip Inflation Now (or WIN) through tax increases. During the course of the discussion, Laffer is supposed to have grabbed a pen and a table napkin lying around and drawn a curve showing the trade-off between tax rates and tax revenue, giving the idea its name.

Laffer had no memory of doing this and said that he drew the trade-off curve all the time to anyone who was willing to listen to him. As he put it more than two-and-a-half decades after Wanniski's article, '… the restaurant used cloth napkins and my mother had raised me not to desecrate nice things.' Laffer has also clarified that the so-called 'Laffer curve' was not invented by him and was first discussed by the Arab philosopher Ibn Khaldun and later by none other than John Maynard Keynes.[95]

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Milton Friedman was of the opinion that giving politicians money meant that they would spend it. But they would not be able to spend it as efficiently as the private sector. He felt it made more sense to cut taxes, leave more money in the hands of people and let them do what they wanted to do with it. This line of thinking had a huge influence on Reagan.

This, along with the theory of the Laffer curve, was used as an economic basis to cut taxes in August 1981. The followers of Keynes

like Paul Samuelson, the first American economist to win a Nobel Prize, felt that there was no example in economic history where such logic had worked.[96] But the president went ahead with the tax cuts anyway.

The top rate of tax was brought down from 70 per cent to 50 per cent and the lowest rate from 14 per cent to 11 per cent over a three-year period. Interestingly, by the end of Reagan's rule, the highest tax rate fell to 31 per cent.

The tax cuts did work at some level by putting more money in the hands of people. This led to increased spending and businesses performed better and employed more people. Unemployment, which had reached 9.7 per cent in 1982, began to decline as income tax rates fell. It was at 7 per cent in 1986 and 5.3 per cent in January 1989, around the time Reagan made way for the next president.[97]

Increasing employment was also reflected in better GDP numbers. Between 1977 and 1982, the rate of growth of real GDP had averaged at 2.27 per cent. Between 1983 and 1988, the real GDP growth rate more or less doubled to 4.44 per cent.[98]

Tax cuts also ensured that there was more money in the hands of the people to invest in the stock market. Between 1983 and the end of the decade, the Dow rose by 163 per cent.[99]

In the good things that followed the tax cuts initiated by Reagan, there was an element of luck involved. These cuts came over a period of three years between late 1981 and 1983. Volcker had managed to bring inflation under some sort of control by then. If he had not raised interest rates to tame inflation, Reagan's tax cuts would have fuelled inflation.

Lower taxes did not automatically lead to higher tax revenues as the Laffer curve suggested. Income taxes and corporate taxes in the year 1980, before Reagan had taken over as president, stood at 11.3 per cent of the GDP. By 1988, the last year of Reagan's rule, the number had fallen to 9.9 per cent of the GDP.[100]

This meant that the government was spending more than it was earning and an increase in the budget deficit. In 1980, the deficit stood at 2.62 per cent of GDP. By 1986, during the second year of Reagan's second term, it had reached an unheard of 5.33 per cent of GDP, and fell to 3.77 per cent of GDP in 1988.[101] The US had been running budget deficits since the end of the Second World War. In that sense, there was nothing new to it, but the deficits during the Reagan years became bigger than anything that had been seen before. The Reagan deficits became a benchmark which the next few presidents tried to beat. The confidence in running these budget deficits came from the fact that American politicians and economists knew that the dollar reserves

accumulating all around the world would be used to buy bonds issued by the American government to finance its budget deficit. The great demand for these bonds would ensure that the US would be able to get away with offering low interest on these bonds. The biggest advantage was that these bonds were in dollars. Even if the government did not have the money to repay, it could always print more dollars and repay the money invested in these bonds.

With all the money being raised as debt to finance the budget deficit, the US became a net debtor to the world in 1986 (i.e., the US owed more money to foreigners than foreigners did to the US).[102] On this occasion, Thomas Gale Moore, a member of the Council of Economic Advisers to Ronald Reagan, said that there was nothing to worry about as 'we can pay off anybody by running a press'.[103]

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The OPEC members collectively earned $3.5 trillion between 1974 and 1998, which is the largest monetary transfer that has happened in the history of the world.[104] The two oil shocks of 1973 and 1979 also had a major part to play in this huge accumulation of wealth. Various estimates are available on the kind of money OPEC earned by selling oil in the 1970s. These range from anywhere between $240 billion to $740 billion.[105]

An estimate made by Volcker in 1980 suggested that OPEC countries accumulated $240 billion between1974 and 1979. Of this money, nearly $95 billion went into the Eurodollar market. Around $50 billion came into bank deposits in the US or was used for the purchase of American government bonds which were issued to finance the budget deficit. So it was petrodollars that helped finance the American budget deficit. The high price of oil was bad for the US, but it was also good because those same dollars came back to finance its budget deficit.[106]

In fact, after the first oil shock of 1973, there was a huge flow of dollars into OPEC countries. This money was beyond what was needed for domestic investment needs. These extra dollars came to be known as 'surplus petrodollars' and a major portion of these dollars found their way into banks in London and New York. In 1974, David Mulford of the London-based White, Weld & Co, a Eurobond firm, along with the assistant treasury secretary of the US, Jack F. Bennett, set up the arrangement to handle the surplus Eurodollars.[107]

The OPEC surplus (i.e., the difference between what the OPEC members earned from their exports, which was primarily oil, minus

what they had to pay for their imports) jumped from $7 billion in 1973 to $70 billion in 1974 due to the oil shock.[108]

Saudi Arabia and other OPEC countries deposited their surplus dollars with banks in Great Britain and the US.[109] These banks lent this money as loans to countries which needed to finance their burgeoning budget deficits. With all these oil dollars coming in, the size of the Eurodollar market went up from $160 billion in 1973 to $485 billion by the end of 1978 and $600 billion by the middle of 1980.[110]

As oil prices started to go up, a lot of developing countries saw their budget deficits increase as more money had to be spent for the import of oil. The recession that followed after the first oil shock led to the prices of agricultural goods and minerals falling all over the world. This meant lower revenues for governments and greater budget deficits.

Meanwhile, a higher price for oil had led to a situation where more money was available in the Eurodollar market for lending. American and British banks operating in the Eurodollar market lent the excess petrodollars to countries which needed dollars to finance their oil imports. One way of earning dollars for these countries was by selling goods and services to OPEC countries. For instance, Brazil could increase its export of coffee to the OPEC countries, get paid in dollars and use them to pay for oil from OPEC. But that would only be possible if the citizens of the OPEC countries were willing to drink extra coffee. If they were not, the only option for a country like Brazil was to borrow dollars in the Eurodollar market to pay for the oil it required. Latin America was a major borrower in the Eurodollar market. Its outstanding loans went from $28 billion in 1970 to $159 billion in 1978. Around $89 billion of this money was borrowed by Brazil and Mexico. As far as lending money was concerned, the US banks were at the top, with eight money-centre banks (banks which only conduct activities with governments, large corporations and regular banks) having lent around $36 billion by the end of 1978. This lending accounted for 9 per cent of their assets and 209 per cent of their capital.[111]

American banks went out of their way to lend to Latin American countries because the working capital loan market, which had been big business for them, had dried up as companies started raising money by issuing commercial paper.

These loans given by American banks to South American countries were floating-rate loans linked to the London Interbank Offered Rate (LIBOR), which is the average rate of interest that banks in London charge while lending to other banks. These loans were repriced

approximately every six months, meaning the rate of interest on these loans changed every six months depending on where the LIBOR was at that point of time.

After assuming office in August 1979, Volcker went about increasing the interest rate till it touched 20 per cent, to tame inflation. But with the interest rates in America going up, the LIBOR also went up. This meant that the interest rates on Latin American loans given by American banks also went up. Also, the confidence in the dollar returned, and it started to appreciate against other currencies. This meant that Latin American countries needed more of their currencies to repay their dollar loans. In August 1982, the finance minister of Mexico indicated that Mexico would no longer be able to continue making interest payments. This led to a contagion. By the end of the year, nearly forty nations in the Eurodollar market were running late on their interest payments. A year later, twenty-seven countries were negotiating to get their existing loans restructured. This included Argentina, Brazil, Mexico and Venezuela.

Volcker was aware of what was brewing, and for the first time in nearly three years, he cut the interest rate in July 1982. Sometime in the middle of August 1982, he helped the American banks that were in trouble by buying Mexican debt securities worth $600 million by printing dollars. This meant that a part of the risky debt was transferred from the balance sheets of the banks to the Federal Reserve, which now held a part of the Mexican debt on which interest payment had been stopped.

The American government also organized a rescue package of $4.55 billion in which it contributed a major part of $3.63 billion. This was to ensure that Mexico did not default on its loans immediately, which would have had a telling impact on the American banks. This rescue was the beginning of a period that is still ongoing, during which many American financial institutions were rescued once they got into trouble due to bad lending. In fact, the rescue by American financial institutions time and again egged them on to take more risks and had disastrous consequences in the years to come.

A major reason for the continued lending to Latin America was the prevailing feeling that nations do not default. In fact, even Volcker said the same thing in a magazine article he wrote in 1980. ‘On the whole, the record since 1973 has shown that outright defaults by borrowing countries are virtually non-existent.’[112]

7

The Man Who Would Be King

The reason often presented for investment in stocks is that in the long run, the returns the stocks generate far exceed every other form of investment. But nobody really tells you how long the long run will be. Between 1976 and 1981, the Dow rose by a minuscule 2.7 per cent. Halfway through this period, Volcker took charge of the Federal Reserve of the US and successfully launched a war against inflation. By the middle of 1982, inflation had been brought totally under control.

Interest rates were on their way down as well. But even on 11 August 1982, the Dow was still at 777, having fallen by nearly 11.2 per cent since the beginning of that year. The stock market was still not convinced that the worst of inflation was over and was waiting for the next big signal.

On 17 August 1982, the signal came from Henry Kaufman of the Wall Street investment firm Salomon Brothers. Kaufman was at that point of time referred to as Dr Gloom and Dr Doom, for his bearish views on bond prices.

He had just returned from a European holiday where he had been mulling over his bearish interest rate outlook. As soon as he came back, he called his associates and started to review the data on the current interest rate scenario. Having gone through the data, he concluded that a significant decline in interest rates lay ahead. So, what caused Dr Gloom to change his views? As he writes in his autobiography *On Money and Markets: A Wall Street Memoir*:

> To begin with, the economy was stalling, which was likely to moderate inflation. Second, financial blockages and intense

> international competition were straitjacketing the economy. Businesses were coming under intense pressure to refurbish their balance sheets. At the same time, financial institutions were no longer enjoying conditions favourable to aggressive lending and investing … With all this in mind I decided to become bullish.[1]

The paragraph above might sound a bit confusing. While Kaufman's reasons for a significant fall in inflation were all negative, he concludes that he had decided to become bullish. How was that possible? As inflation came down, the interest rate offered by the government of the US on the bonds it issued to finance its budget deficit would come down as well. When the rate of inflation was at 15 per cent, the government probably needed to offer an interest of 20 per cent on its bonds, so that the real rate of return on the bonds was 5 per cent (20 per cent–15 per cent). If the inflation came down to 5 per cent, the government need not have offered a 20 per cent interest on its bonds. It could have offered a lower interest rate, of let's say, 9–10 per cent on the new bonds it would issue to finance the budget deficit.

So, this would lead to a situation wherein the newer bonds issued by the government would be paying a rate of interest of 9–10 per cent, whereas the older ones would be paying a rate of interest of 20 per cent. In this scenario, investors would want to buy the older bonds, which paid a higher rate of interest, and this would drive up the price of the older bonds. Or, to put it simply, the bond market would see a rally. And that's why Kaufman said that he had decided to become bullish. He predicted that returns on long-term US bonds would fall from 12.75 per cent to the range of 9–10 per cent.[2]

What was interesting was that Kaufman's colleagues at Salomon Brothers were surprised by his prediction. But the bond markets started to rally as soon as they opened. And so did the stock market on the lower inflation forecast. On 16 August 1982, a day before Kaufman's lower inflation and lower interest rate forecast came out, the Dow had closed at 792. On 17 August, it closed at 831, registering a gain of 4.9 per cent. The bull market of the 1980s started on that day.

Between August 1982 and August 1987, the Dow rose from a low of 777 on 12 August 1982, to a high of 2,722 on 25 August 1987.

By the time Volcker left office on 12 August 1987, inflation in the US was at 4 per cent. Low inflation was not the only reason behind the five-year bull run. Many companies were moving from defined benefit pension plans to defined contribution pension plans. In the case of the defined benefit pension plans, the retired employees got a pension which

was equivalent to a certain portion of their last earned income. The company paid this out of its current revenues. This was not a good financial practice, especially in a scenario wherein employees were living longer. It meant higher pension expenses for companies and thus lower profits.

This led to companies moving on to defined contribution plans wherein workers contributed a certain portion of their salaries towards creating a corpus for their retirement. The company matched the contribution. On retirement, the amount accumulated could be used to generate a regular monthly pension.

As this was a serious long-term investment, a lot of it came to the stock market. It was also around this time that the concept of a 401(k) account (named after a section in the tax code) came into being. This allowed taxpayers to invest in stocks as well as bonds. In the case of 401(k), unlike other pension accounts, the taxpayers could manage money on their own. This led to a huge amount of money coming into the stock market.

All this money helped push up the value of stocks that were undervalued, and in the process, made stars out of fund managers like Peter Lynch. In the summer of 1966, Lynch had applied for a summer job at Fidelity, at the suggestion of one Mr Sullivan who was the president of Fidelity, for whom Lynch had caddied.[3]

In May 1977, after having been the director of research at Fidelity for three years, Lynch was made the fund manager of a small Fidelity fund called Magellan. The fund had assets of $20 million at that point of time and invested in forty stocks. Lynch's mandate was to reduce the number of stocks to twenty-five. Instead, he increased it to sixty stocks and then to 150 stocks. In 1985, Magellan became the biggest mutual fund in the US. At its peak, the Magellan fund had $14 billion invested in around 1,400 stocks.[4]

For the thirteen years that Lynch managed Magellan, from May 1977 to May 1990, the fund gave a return of 29 per cent per year.[5] This meant that $1,000 invested in Magellan at the time Lynch started managing the fund would have grown to around $27,400 by the time he gave up charge of the fund.

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The year 1987 had started on a good note. By August 1987, the Dow was up by around 42 per cent to 2,722, since the beginning of the year. As happens in such situations, analysts, fund managers, and stock

market experts had turned even more bullish and were now predicting a new level of 3,600, which was almost a third higher than where the market was at that point of time. But stock markets never go up (or fall down) in a linear manner. So, bull runs have their periods of scares and bear runs have their periods of ecstasy. After reaching this peak of 2,722, the Dow's performance had been subdued and had been falling, albeit slowly. The fall accelerated on 14 October 1987, when it fell by ninety-five points. The next day, which was a Thursday, it fell by fifty-seven points. On Friday, it was down 108 points from its close on Thursday. This was the first time that it had fallen by more than 100 points in a single day.[6] Between 14 and 16 of October, it had fallen by 260 points or 10 per cent from the level of around 2,500.

On Monday, 19 October 1987, the Dow Jones Industrial Average, America's premier stock market index, fell by a whopping 508 points or 22.6 per cent to 1,738.74. It was like a bolt from outer space which nobody had expected.

The economy was not in the best shape. Ronald Reagan continued to run a huge budget deficit. Between 1981 and 1987, the government of the US ran a combined budget deficit of around $1.22 trillion. This had to be financed through the government issuing bonds, and hence, the public debt of the government had increased from around $712 billion at the end of 1980 to around $1.9 trillion by the end of 1987.[7]

Inflation was also going up, having risen to around 3.6 per cent from 1.9 per cent during 1986. The Federal Reserve had not raised the interest rate for almost three years, and it finally raised the rate from 5.5 per cent to 6 per cent on 4 September 1987, concerned about the inflationary pressures.[8]

Normally, when a central bank changes direction after a significant extent of time, the stock markets do tend to get a little rattled. But nothing really untoward happened after the Federal Reserve raised rates. The stock market fell a little and banks went around increasing their prime lending rates.

The stock market started falling in October. In the first week, the Dow fell by 6 per cent, and by another 12 per cent in the second week. The fall increased in the third week and on 16 October 1987, the Dow fell by or 4.6 per cent in a single day. On Monday, 19 October 1987, when the market opened again after the weekend, the party came to an end.

Peter Lynch had taken his first holiday in a decade and was in Ireland with his wife, having reached there on Friday, 16 October. But his holiday soon came to an end. He was on the phone constantly with his

office deciding on which of the 1,500 stocks in his portfolio to sell, to generate enough cash for all the redemption requests that were coming in from investors in the Magellan Fund. By the end of the day, the one million investors in the Magellan Fund had lost nearly 18 per cent or $2 billion of their assets. Such was the enormity of the carnage on 19 October 1987, the day they call 'Black Monday'.

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If it was not easy for Lynch, it surely was not easy for others battling the freak situation that had arisen. This included Alan Greenspan, who had taken over as the chairman of the Federal Reserve a little over two months earlier, in August 1987. On 19 October 1987, Greenspan was supposed to fly to Dallas, Texas, where he was addressing a convention of the American Bankers Association. It was supposed to be his first major speech as the chairman. The stock market had opened on a weak note on that day which happened to be a Monday and was down by 200 points in early morning trading. It was decided that Greenspan should continue with his plan of going to Dallas because otherwise it would appear that the Federal Reserve was panicking, which would not be the best sign to send out to the market from the office of a chairman who was just a couple of months into his job.[9]

The airplane he travelled in did not have a telephone, and so he was largely unaware of the carnage that had taken place in the stock market till he landed in Dallas. On landing, he inquired about the state of the stock market and was told, 'It was down "five oh eight".' Greenspan thought that the stock market was down 5.08 points and even remarked 'What a terrific rally!' [10] Only once he said that did he realize that the market had seen its biggest ever drop.

It was but natural this crash was compared with the crash that started the Great Depression in late 1929. By October 1987, nearly sixty years later, it was felt that the Great Depression started because the Federal Reserve did not ensure that there was enough money going around in the financial system. What was just a stock market crash came to be seen this way, inspired by the ideas of Milton Friedman.

So, the Federal Reserve had to ensure that there was enough money going around in the financial system. If the banks and other financial institutions did not have the money to pay what they owed the others, it was the job of the Federal Reserve to ensure that it was willing to lend.

The next day, 20 October 1987, the Federal Reserve issued a single-sentence statement before the stock market opened: 'The Federal

Reserve, consistent with its responsibilities as the nation's central bank, affirmed today its readiness to serve as a source of liquidity to support the economic and financial system.'[11]

The statement was backed with action. Traders at the Federal Reserve Bank of New York were asked to buy government bonds from the market and ensure that there was enough money going around. When the Federal Reserve buys government bonds, it pays cash and so ensures that there is enough money in the financial system.

What typically happens in such a scenario is that panic sets in and cash becomes king. Even if institutions have good financial securities which they can sell and raise money at any other point of time, they do not find any buyers during times of panic. The market ceases to operate. When this happens, defaults take place because there is no way that payments can be made unless an institution has cash.

In this scenario, by continuing to buy government bonds, the Federal Reserve kept pumping money into the financial system.

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The decision of the Federal Reserve to be ready to flood the market with as much money as would be required stabilized things.

On 20 October, the Dow Jones Industrial Average closed more than 100 points up. The next day it was up 187.

Disaster had been averted on Wall Street. And it was not 1929 all over again. And the man responsible for it was Alan Greenspan. At least that is the way the market viewed it. This firmly established Alan Greenspan as an able successor to Paul Volcker in the eyes of politicians, as well as those working on Wall Street.

The stock market rally continued. By the end of next year, 1988, the Dow was 25 per cent up from the low it had attained on Black Monday in October 1987. By the end of 1989, it was 58 per cent up from the low of 1987.

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The jury is still out on what caused the crash of 1987. It could not have been economic factors like inflation or the high budget deficit. They were as bad or as good on 19 October 1987 as they were a day earlier or a day later. One of the explanations that had emerged blames the Black Monday crash on something known as portfolio insurance.

A few years into the stock market rally that started in 1982, fund managers were keen to lock in their gains. One way to lock in gains

would have been to simply sell the shares on which the gains had been made. If a fund manager had bought a stock for $100 and it went up 30 per cent to $130, he could sell the stock at $130 and cash in a gain of 30 per cent. But what if the price of the stock went up to $160? If the fund manager had already sold out at $130, he would lose out on the extra $30 that he could have made by staying invested in the stock.

There was also the danger that the price of the stock could fall to $100 from $130 and lead to a situation where the fund manager would not have made any gains.

The fund managers wanted a system which allowed them to keep making their gains but at the same time also ensured that their gains were not frittered away and losses, if any, were limited. The portfolio insurance system allowed them to do just that, at least in theory. And that is how it was marketed.

Let us try and understand how the system worked through an example. A fund manager bought a stock for $100. The price rose to $130, and he was sitting on a $30 or 30 per cent gain. He saw good times ahead and wanted to continue holding on to this investment. But the stock market can turn at any point of time and so he did not want to fritter away all the gains that he had already made. He arranged with his stockbroker in advance for the stock to be sold the moment the price of the stock went below $125. This would ensure that the fund manager would at least make 25 per cent on his investment and not lose everything that he had gained.

So far so good. But as Keynes had said in a different context, what makes sense at an individual level often does not make sense at the level of the financial system as a whole.

Portfolio insurance was not a system that was available only to an exclusive few; it was available to everybody and anybody who was willing to pay for it. And what did it do? It executed a computerized sell order if the price of a stock fell below a certain price. But what would happen if almost everybody or at least a large section of the stock market investors set sell orders at more or less similar prices? Disaster! And that is precisely what happened.

As Robert J. Barbera writes in *The Cost of Capitalism – Understanding Market Mayhem and Stabilizing Our Economic Future*:

> The problem arrived with a vengeance in the fall of 1987. It turns out that a great many money managers had locked in automatic sell orders. And most of the sell orders were triggered at around the same price level for the overall market … And in

> October 1987, in a wild display of ingenuity gone haywire, thousands of institutional investors watched their automatic sell orders kick in on the same day.[12]

As per theory, as sell orders kicked in and prices fell, buyers would start entering the market finding that good bargains were available. But that logic did not work on that day. During the carnage that happened on 19 October 1987, nobody had the guts to put in a buy order. And so the portfolio insurance programmes kept selling all day and the stock prices kept crashing.

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On 19 October 1987, nearly $500 billion of shareholder wealth was destroyed.[13] The next day, when the stock markets around the world in Hong Kong, Italy, France, England and Australia saw significant falls, the question everyone was asking was: 'Is 1929 coming back?'

That did not happen because Greenspan and the Federal Reserve flooded the market with money and in the process pushed down lending rates. This made Greenspan the darling of the American and world media as well as Wall Street firms. Many magazines and newspapers referred to this as Greenspan's finest hour.

The irony of course was that Greenspan was a devotee of Ayn Rand, who through her books and thinking had championed the cause of what she called 'objectivism'. Among other things, one of the central points of objectivism is that the moral purpose of an individual's life is the pursuit of his own happiness and the only social system that is consistent with this right is laissez-faire capitalism, that is, allowing the various markets to operate on their own without any government intervention in them.

Given his belief in laissez-faire capitalism, Greenspan should have largely left the financial system to sort itself out in the aftermath of the stock market crash, but he did not. As Ravi Batra, an Indian-American economist, writes in *Greenspan's Fraud – How Two Decades of His Policies Have Undermined the Global Economy*: 'In the immediate aftermath of the 1987 crash, he [Greenspan] swiftly reduced interest rates … This was smart central banking and would help him navigate crises yet to come. But it made a mockery of his core belief that the economy should be left to itself.'[14]

During the time he worked as an economist on Wall Street, Rand was a huge influence on Greenspan. He was a regular at the weekly meetings Rand held at her apartment in New York in the 1950s and early 1960s. In fact, Greenspan was so close to Rand that when he took oath as the

chairman of the Council of Economic Advisers to president Gerald Ford in 1974, in the Oval Office, she was standing next to him.[15]

But at the same time, he realized that he could not be too hung up about the influence her ideas had had on him. As he writes in his autobiography, *The Age of Turbulence*:

> I still found the broader philosophy of unfettered market competition compelling, as I do to this day, but I reluctantly began to realize that if there were qualifications to my intellectual edifice, I couldn't argue that others should readily accept it … When I agreed to accept the nomination as chairman of the president's Council of Economic Advisors, I knew I would have to pledge to uphold not only the Constitution but also the laws of the land which I thought were wrong … Compromise on public issues is the price of civilization, not an abrogation of principle.[16]

This disconnect between the personal and the professional would keep coming back to haunt Greenspan during the nearly two decades for which he was the chairman of the Federal Reserve.

He was also an advocate of gold as money and the gold standard in his earlier avatar as a Wall Street economist. He made these points in an article titled 'Gold and Economic Freedom' which he wrote for Ayn Rand's newsletter, *Objectivist*, in 1966. He said, 'Deficit spending is simply a scheme for the confiscation of wealth.'[17] The logic being that when a government finances its budget deficit by printing money it leads to inflation and brings down the purchasing power of money, which in turn means confiscation of wealth by the government.

But by the time Greenspan became the chairman, the American government had been running huge budget deficits. Between 1981 and 1988, the American government had run a total budget deficit of $1.4 trillion.[18]

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A major reason for the huge budget deficits that were being run was the fact that America was becoming a welfare state which wanted to offer more things free to its citizens, from the cradle to their graves.

There was, however, another lesser reason for the increase in the budget deficit. This was the crisis plaguing the savings and loan institutions (S&Ls), or thrifts, as they were more popularly referred to. Between 1980 and 1996, the budget deficit of the US amounted to an

average of 3.07 per cent of the GNP. Of this, 0.24 per cent of the GNP was because of the crisis facing the S&L institutions in the country.[19] These were first created in the 1930s to give out home loans (or mortgages, as they are more popularly referred to in the US) because big banks tended to neglect this segment of lending. Loans from the S&Ls financed the building of huge American suburbs after the end of the Second World War. People would deposit their money in an S&L passbook savings account, which was insured by the American government, and earn an interest of 3 per cent. This money would then be lent by the S&L as a thirty-year fixed-rate mortgage on which they charged an interest rate of 6 per cent.[20]

The going joke on anyone who worked for an S&L was that he was in a 3-6-3 business. He could borrow money at 3 per cent. Lend it at 6 per cent. And be at the golf course by 3 p.m. Such was the simplicity of this business. By the end of 1987, there were around 3,600 S&L institutions in America, with assets of around $1.5 trillion.[21]

Trouble had been brewing at the S&Ls for years. Volcker had taken interest rates to very high levels to control inflation. This had hit most S&Ls hard, simply because they borrowed for the short term through their passbook savings account and lent long term in the form of a fixed-rate thirty-year mortgage. As interest rates went up, the rates at which S&Ls had to borrow went up as well, but they were not matched by a higher rate of interest on the mortgages they had already given out over the years as these mortgages had fixed interest rates.

S&Ls were losing money on a lot of their good loans because the rate of interest at which they were borrowing was higher than the rate at which they had lent. In 1981-82, this led to a situation wherein S&Ls throughout the US faced total losses amounting to $10 billion. Some estimates even suggested that more than half of the S&Ls in the US had a negative net worth (i.e., their liabilities were more than their assets) and were bankrupt by then.[22]

The trouble was that S&Ls, unlike banks, had all their eggs in one basket. To get rid of this problem, the Garn-St Germain Act of 1982 permitted S&Ls to foray into different kinds of lending. It allowed S&Ls to invest up to 40 per cent of their assets in commercial real estate, 30 per cent in consumer lending and even up to 10 per cent in junk bonds. Until then lending by S&Ls was largely limited to fixed-interest rate mortgages.[23]

Before this intervention, the Depository Institutions Deregulation and Monetary Control Act (DIDMCA) of 1980 had done away with the interest rate ceilings that S&Ls had to adhere to on the deposits they

took in. The regulation governing this was referred to as Regulation Q. This was necessary in the light of the high interest rate environment that Volcker had created in order to bring down inflation. When interest rates rose, a lot of large- and medium-size depositors withdrew money to park it in treasury bills. Treasury bills are financial securities with a maturity of less than one year issued by the government. Smaller depositors also gradually started withdrawing their money and putting it into money market mutual funds, which invested the money they collected, in treasury bills.[24] To keep the funding of S&Ls going, it was important that they be allowed to raise money at the market rate of interest.

The DIDMCA also increased the number of federal deposit insurance on the money deposited in S&Ls from $40,000 to $100,000.[25] The capital required to carry out an S&L business was also reduced from 5 per cent of assets in 1980 to 3 per cent in 1982. This was done so as to ensure that regulatory action does not get triggered against S&Ls which were low on capital.[26]

Instead of shutting down the bankrupt S&Ls, the Federal Home Loan Bank Board (FHLBB) which regulated S&Ls let them run. The major reason for this was the lack of enough funds to pay off depositors whose deposits were insured. By 1985, the regulator knew that the S&L business was in a major soup, but it still did not do anything. The cost of dealing with this crisis at that point was estimated to be around $15 billion. But the Federal Savings and Loans Insurance Corporation (FSLIC), the institution which insured the deposits in the S&Ls, only had around $5 billion of assets.[27] There was a shortfall of $10 billion, and there was no way a rescue could have been arranged.

The result was that bankrupt S&Ls were allowed to run. These S&Ls had largely lost their capital and had nothing more to lose and started indulging in extremely risky lending. The idea was if the risk came off, a lot of money would be made and the S&L would come out of its bankruptcy. If it did not, the depositors' money was anyway insured to the extent of $100,000.

As Frederic S. Mishkin writes in *The Economics of Money, Banking and Financial Markets*:

> This strategy is similar to the 'long bomb' strategy in football. When a football team is almost hopelessly behind and time is running out, it often resorts to a high-risk play: the throwing of a long pass to try to score a touchdown. Of course, the long bomb is unlikely to be successful, but there is always a small

chance that it will work. If it does not, the team has lost nothing, since it would have lost the game anyway.[28]

The Garn-St Germain Act of 1982 had allowed S&Ls to go beyond dealing in simple mortgages. This Act was put to full use by the bankrupt S&Ls by financing the building of a lot of risky commercial real estate like malls in the middle of nowhere and buying billions of dollars of junk bonds.

S&Ls became big buyers of junk bonds during the mid-1980s. This was a time when the investment banker Michael Milken had made investing in junk bonds fairly respectable. Junk bonds are essentially bonds where the risk of default is fairly high. And given this risk, the rate of interest on offer is also much higher than a typical investment-grade bond. The trouble was that S&Ls had really no experience in the junk bond business. Making use of this opportunity, the Wall Street mavens who sold these bonds palmed off the junkiest of the junk bonds to the S&Ls.

Also, S&Ls which were in a very bad shape started offering a very high rate of interest to attract deposits. The depositors did not have a problem with depositing their money with such S&Ls even when they knew that they were zombies because their deposits were insured to the extent of $100,000. This created problems for the good S&Ls, which had to also start offering higher interest rates on their deposits in order to ensure that the depositors continued to invest with them. This made their business less profitable and, more often than not, pushed them into the bankrupt category as well. The zombies did not stop at this. In order to attract business, they started offering loans at lower interest rates in comparison to healthy S&Ls.[29]

This was a perfect recipe for disaster, wherein S&Ls were borrowing at higher rates and giving out money at lower rates. Politicians also helped S&Ls hide their true state by allowing them to carry their assets at the book value rather than the market value. While most accounting happens at the book value, or the price at which the asset was acquired, for financial institutions it is very important to follow the current market value of their assets. Otherwise, it can lead to major problems.

Let us understand this through an example. An S&L gives out a loan of $100,000 to an individual to buy a house worth $125,000. The individual invests the remaining $25,000 by himself and buys the house. So the situation at the beginning is that the S&L has given a loan of $100,000 to buy an asset which is worth $125,000. If the borrower defaults immediately, the S&L can sell the house for $1,25,000 and

recover the $100,000 it had given out as a loan. Now let us say there is a crash in the real estate market a few years later and the value of the house falls to around $70,000. By then the borrower has been repaying the loan, but still has $85,000 outstanding.

The borrower runs into financial trouble and decides to default on the loan because he has not got enough money to repay the loan. The value of the house on the books of the S&L is still $100,000, the loan it had originally given to the borrower to buy the house, although its real value since then has fallen to $70,000. If the S&L were to sell the house, it would recover only $70,000 against an outstanding loan of $85,000 and would have to face a loss of $15,000.

Book value accounting did not give a correct picture of the state that the S&Ls were in. Such a situation could have been avoided if the regulators had supervisors going about their jobs efficiently. But what was happening was that as more and more S&Ls got into trouble, the number of regulatory supervisors had actually been coming down.[30]

The politicians kept looking the other way primarily because the US League of Savings and Loans, the major lobbying group for the S&Ls, made significant contributions to campaign funds that politicians required to contest elections. In fact, Fernand St Germain, the man behind the legislation which unshackled the S&Ls in the early 1980s, was a major receiver of funds and favours. He regularly dined out at the expense account of the US League Savings and Loans. In fact, after St Germain was voted out of office in 1988, he became a lobbyist for the S&Ls.[31]

The politicians finally started to wake up in late 1986, when the Reagan administration sought a $15 billion bailout for the S&Ls. Even though this amount was inadequate, and all they got from the Congress in 1987 was $10.8 billion which the FSLIC, the deposit insurance company for the S&Ls, was allowed to borrow. But at the same time, the Congress directed the regulator not to shut down any S&Ls but to let them continue to operate, particularly in areas like Texas which were economically depressed.[32]

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Like most half-baked measures, the bailout of 1987 did not go anywhere. George Bush took over as the forty-first president of the US in early 1989 and one of his first measures was to tackle the S&L problem which had attained enormous proportions by then. The FHLBB, the regulator, and the FSLIC, the deposit insurance company, were both

done away with. Another company, the Resolution Trust Corporation (RTC) was set up to sell the assets of around 750 S&Ls which had gone bankrupt and were worth nearly $450 billion on paper.[33]

The RTC had an oversight board chaired by the then treasury secretary Nicholas Brady. It also had Alan Greenspan as one of its members. The RTC was in possession of a lot of assets, like half-built malls in deserts, marinas, golf courses, even uranium mines. One estimate suggested that even if it were to sell $1 million worth of assets every day, it would take around 300 years to sell the entire lot of assets that it had. The decision was made to sell RTC assets in a block of properties worth $1 billion. While the first few auctions did not get the prices they deserved, the auctions soon picked up and the RTC managed to recover a lot of money.[34] The RTC managed to sell nearly 95 per cent of its properties and had a recovery rate of around 85 per cent (i.e., for an asset worth $100 on the books, it got $85) till it was finally disbanded in 1995. But even this was not enough to meet all the money that had to be paid to the depositors. As mentioned earlier, the deposits made in S&Ls were insured to the extent of $100,000.

The S&Ls paid an insurance premium to the FSLIC, the deposit insurance company for the sector. This premium was a certain proportion of the amount of deposits they had. But the money that had thus been collected as premium along with the money that was recovered by the RTC by selling the assets of bankrupt S&Ls was not enough to pay off the depositors completely.

The difference had to be paid by the government. This increased its expenditure and the budget deficit. The money going towards paying off the depositors constituted nearly 13 per cent of the budget deficit in 1992.[35]

Estimates on how much money it cost the American government (read the taxpayer) to rescue the S&Ls and pay off the depositors vary widely. Alan Greenspan in his autobiography puts the number at $87 billion.[36] A study by the Congressional and Budget Office published in January 1992 puts the number at $200 billion.[37] Another estimate puts the cost of the entire bailout at $500 billion, including the interest payments that were made on the debt that was raised to finance the bailout.[38]

This bailout set the tone for the next two decades. Between the Federal Reserve and the government, the American financial services industry would be rescued time and again from disaster. The risk of moral hazard would come out in full force. What this and the coming rescues told the financial services industry was that they could take

public money and invest it in any risky way, and if anything went wrong, the Federal Reserve and the government would come to their rescue.

This struck at the heart of the free market system that the US stood for. As long as financial firms made profits, it worked, but the moment they started making losses, their losses had to be socialized.

8

When a Tokyo Palace Became More Expensive than California

At the end of the First World War, seeing the state that Germany was in, Japanese leaders decided that their country needed to be self-sufficient in natural resources. This meant that they would have to establish political and economic control over large parts of Asia. The Japanese had to wage war to capture other countries in Asia. When emperors look to build empires or to wage war, printing money to finance the operation is a natural consequence of the same.

As Japan printed money to finance its military campaign, the yen rapidly lost value against other currencies. This was in the 1930s after the gold standard had collapsed. Currencies no longer had a fixed value against each other. The value of the yen depreciated very rapidly. At the beginning of the 1930s, it had been worth two to a dollar and by the end of the 1930s it had lost half its value. But the worst was yet to come.[1]

Japan's need for self-sufficiency and its policy of capturing large parts of Asia forced it to become dependent on the US. By late 1930s, the US was fulfilling nearly 75 per cent of Japan's scrap iron needs and 80 per cent of its petroleum imports. As Hitler drove through Europe, seizing control over other nations, the US decided to begin its own rearmament programme. Exports of commodities to other parts of the world were frozen so that the US could fulfil its own needs. On 18 July 1941, all Japanese assets in the US were frozen and export controls were also put into place.[2]

Japan responded by bombing Pearl Harbour in Hawaii on 7

December 1941 (it was 8 December 1941 in Japan) and this forced the US to enter the Second World War.

The US ended the war nearly four years later by dropping two atom bombs on the Japanese cities of Hiroshima and Nagasaki on 6 and 9 August 1945, respectively. Japan was in a bad shape economically after the end of the Second World War. The bureaucrats tried to solve the problem by printing money. But that did not help, and four years later, the price levels were nearly 300 times of what they were at the end of the second World War.[3] The amount of currency in circulation had stood at 17.7 billion yen in 1944, and by 1948, this had expanded twenty times to 355.3 billion yen.[4] This, in turn, led to higher inflation.

The Japanese currency had no value when it came to international transactions. Domestically, the authorities tried to impose a conversion rate of 15 yen to a dollar but that did not hold for long and had to be increased. Gradually, separate yen–dollar conversion rates started to emerge for different goods. At one point in time, they ranged from 66:1 for canned bamboo shoots to 600:1 for lacquerware.[5]

The American banker Joseph Dodge arrived in Japan in 1949 and fixed the value of the yen–dollar conversion rate at 360:1, that is, 360 yen to a dollar.[6] And that is where the value of the yen stayed for more than two decades. Dodge got the Japanese government to balance its budget. This became a habit and the Japanese government balanced its budget every year for the period between 1949 and 1965.[7]

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Japan had ruled Korea since 1910. After the bombing of Hiroshima and Nagasaki, the Japanese surrendered and Korea was divided into two parts separated by what is known as the 38th parallel. The southern part was occupied by the US and the northern part by the Soviet Union. The precarious situation between the two sides worsened when the North Korean forces invaded South Korea on 25 June 1950.[8]

Those were the days when the US feared that Soviet inspired communism would take over the world. It provided 88 per cent of the 341,000 soldiers that fought for South Korea against North Korea.[9] This was the first significant conflict of an era that came to be known as the Cold War between the two superpowers, the US and the USSR or the Soviet Union as it was better known.

Japan became a supply base for the US for the duration of the war in Korea. This provided the Japanese industry the initial push that it needed. In the years following, its trade would grow at the very fast rate

of 7.6 per cent a year. A wide variety of new technologies was brought in from the US and implemented in factories and industries across Japan. The adaptability of the Japanese worker and cheap oil were the other main reasons for the Japanese revival. The proportion of oil used in Japanese energy supply increased from 20.5 per cent in 1955 to 77.6 per cent in 1973.[10] The Japanese economy grew 9.2 per cent per year on an average between 1951 and 1973, and became seven times larger in the process.[11] In fact, if we take the shorter period from 1956 to 1973, then the Japanese economy grew at an even faster pace of almost 10 per cent per year.[12]

As Paul Krugman writes in *The Return of Depression Economics and the Crisis of 2008*: 'In the space of two decades a largely agricultural nation became the world's largest exporter of steel and automobiles … and the standard of living made a quantum leap.'[13]

It also helped that labour in Japan was very cheap as well as docile, and most firms guaranteed life-time employment. Between 1955 and 1970, the Japanese manufacturing firms increased their productivity by nearly four times, whereas the real wages went up by only 2.3 times.[14]

The other major factor at work was the formation of keiretsu, which were sets of companies with interlocking business relationships and shareholdings with a bank at the heart of each.[15] The bank lent money cheaply to other group firms. This supply of easy money led to the rapid industrial development of Japan and that, in turn, enabled Japan to flood the world with its cheap but good-quality exports. The rate of interest that the Japanese companies were paying on their debt was so low that no one could compete with them when it came to price.

What helped the banks was that they could raise nearly 40–50 per cent of their deposits very cheaply by paying a real rate of interest (the actual rate minus the rate of inflation) of close to zero per cent.[16] But Japan's good run came to an end in 1973 after the first oil shock, when the price of oil went through the roof. Japan imported large amounts of primary products, like oil from Saudi Arabia, coal from Australia, and soybeans from Brazil. These imports were paid for by exporting large amounts of manufactured products like automobiles and electronics, to higher-income countries in North America and Europe.[17]

With this export formula in place, it was important for Japan that the price of oil remain stable. This was because Japan imported 90 per cent of its energy needs. Any spike in the price of oil made Japanese exports expensive. Exports accounted for 10 per cent of the Japanese GDP. A spike in the price of oil also made products for domestic consumption expensive, and this hurt businesses. Inflation in Japan shot up to 31.6

per cent in 1974, the year after the first oil shock. With prices rising at such a fast rate, the economy slowed down. The Japanese economy which had been growing at the rate of 10 per cent before the oil shock, grew by 8.8 per cent in 1973 and contracted by 1.2 per cent in 1974.[18]

As we have seen earlier, the price of oil would never fall to its previous low levels again. This led to the era of high Japanese growth coming to an end. Between 1974 and 1991, the Japanese economy grew at the rate of 3.8 per cent every year.[19]

The second oil shock, which came in 1979 after the revolution in Iran, made things even more difficult for Japan. The increase in the price of oil reduced the Japanese GNP by 3.3 per cent. The country also ran a rare trade deficit of $18.3 billion during the two-year period of 1979-80. In order to stimulate the moribund economy, the Japanese government started to spend much more than what it was earning. The government had a budget surplus of 0.2 trillion yen in 1973. This changed to a deficit of 2.8 trillion yen in 1974. The country ran an average deficit of 12.9 trillion yen between 1980 and 1983. The deficit had to be financed through the government taking on an increasing amount of debt. The accumulated government debt shot up from 9.4 trillion yen in 1973 to 208.8 trillion yen in 1991.[20] This meant an increase in government debt at the rate of almost 19 per cent per year on an average, during the eighteen-year period.

By 1982, Paul Volcker had brought inflation in the US under control. This meant that the American economy was back on its feet and doing well again. This had an impact on Japan, and exports grew by 26.5 per cent, from $138.8 billion in 1982 to $175.6 billion in 1985, helping the Japanese economy grow by 4.8 per cent during the two-year period of 1984-85.[21] A bulk of the Japanese exports made its way into the US.

A surge in exports also meant that the trade surplus (what Japan exported to rest of the world minus what it imported from it) also went up. From an average of $40.2 billion for the period 1984-85, it more than doubled to $83.2 billion in 1986. But good things do not last forever. The Japanese yen also started appreciating against the dollar and went from 240 yen to a dollar at the end of 1985 to 120 yen to a dollar at the beginning of 1988.[22]

Any increase in the value of a currency is not good for the exports of the country. Goods that sold for a $1,000 earlier would have generated 240,000 yen. With the yen appreciating against the dollar, they would generate only 120,000 yen. This cut the profit margins of Japanese firms, which resorted to cutting costs by firing people. The rate of unemployment went up to 2.8 per cent in 1987. While this rate of

unemployment was normal for the rest of the world, it was not good at all for Japan, where jobs came with a lifetime guarantee.

In order to stimulate the economy and activate domestic demand, the interest rates were cut from 5 per cent at the end of 1985 to 3 per cent in November 1986 and 2.5 per cent in February 1987, the idea being that people would borrow and spend more at lower interest rates. This would create demand for goods and services and get economic growth that had fallen to 2.5 per cent in 1986, up and running again.[23]

Lower interest rates would also help businesses to borrow more and expand capacity. But by 1986, Japanese firms were raising half of their capital abroad from the Eurodollar market.[24] There was not much demand for capital from Japanese companies within Japan. But Japanese banks had a lot of money to lend.

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Japan had been running a trade surplus. Its cumulative trade surplus between 1968 and 1989 amounted to 75 trillion yen. This money came into Japan primarily in the form of dollars and was converted into yen. Japanese foreign exchange reserves during the same period went up from $2 billion to $84 billion.[25] When these dollars came into Japan, they had to be converted into yen by Japanese exporters to meet their expenses and to report their profits in yen. These yen were deposited with banks. This meant exporters had more money to spend and the banks had more money to lend.

As Richard Duncan writes in *The Dollar Crisis – Causes, Consequences, Cures*:

> There can be no question that those trade surpluses directly benefited Japanese exporters and the people they employed. Clearly, there would also have been a multiplier effect, as those firms and their employees spent the money in the domestic economy. Without the purchasing power derived from the trade surplus, Japan's economy would have grown at a much slower pace.
>
> What is much less appreciated is the expansionary impact that those surpluses had on domestic credit as they were deposited into the Japanese banking system. Each year that foreign capital entered Japan's banks, it permitted credit creation. The rapid credit growth that Japan experienced during the 1970s and the 1980s would not have been possible without those foreign capital inflows. The ratio of domestic credit to GDP in Japan

rose from 135 per cent in 1970 to 265 per cent in 1989.[26]

In late 1980s, the interest rates were low and dollars were coming in from abroad. Not surprisingly, with all the easy money going around, banks were desperate to lend and the Japanese stock market was booming. At its peak, it was worth 49 per cent of the value of all the stock markets around the world.[27] Japanese companies had been raising money for their expansion plans from abroad. Also, with a bull run on in the stock market, it made sense for them to raise more money by simply selling more shares instead of taking new loans from banks on which interest would have had to be paid.

This made banks even more desperate for business, and they were soon falling over one another to give out loans for the purchase of real estate. This, in turn, fuelled the greatest real estate boom in the history of mankind. Land prices in Japan were never really low, but they had reached astronomical levels. As Paul Krugman points out in *The Return of Depression Economics*, 'Land, never cheap in crowded Japan, had become incredibly expensive: according to a widely cited factoid, the land underneath the square mile of Tokyo's Imperial Palace was worth more than the entire state of California.'[28]

The stock market also matched the rise of the real estate market. The Nikkei 225, Japan's premier stock market index, hit an all-time high on 29 December 1989, reaching 38,957.44 during the course of the day and then closing the day slightly lower at 38,915.87. It had risen six times during the course of the decade. At the beginning of 1990, the market capitalization of all listed Japanese companies was greater than that of the US, an economy that was more than two times bigger in size.[29]

The price levels that the Japanese stock market and real estate market had reached were indeed very high and not justified. The easy money policy that prevailed had led to a situation where the long term interest rates were very low and this was used as an explanation for the rapid rise of the Japanese stock market and the real estate market: that with interest rates so low, it did not make much sense for anyone to invest in fixed-income instruments and all the money was coming into the stock market and the real estate market. But no party continues forever and all good things come to an end. Yasushi Mieno took over as the twenty-sixth governor of the Bank of Japan, the Japanese central bank, on 17 December 1989. Eight days later, on 25 December 1989, he shocked the market by raising the interest rate. Worse, he publicly declared that he wanted the land prices to fall by 20 per cent, which he later upped to 30 per cent. Central bankers are rarely known to talk in such direct terms.

Mieno went about raising the interest rate, and by March 1991, interest rates were at 8.25 per cent. He did not stop there. In January 1990, bankers were clearly told that growth in real estate loans should not be faster than other forms of lending. This slowed down the money being lent for the purchase of real estate.[30] The number of years that land had to be held to get a favourable tax treatment was increased from five years to ten.[31]

These moves punctured both the stock market as well as the real estate bubble. The stock market fell by 50 per cent from its peak of 38,915.87. The Nikkei 225 closed below the 20,000 level in October 1990, less than a year after it had reached its peak. More than 270 trillion yen of wealth was destroyed. In fact, the Nikkei 225 fell a lot over the years. It closed at 7,054.98 on 10 March 2008, nearly 82 per cent below the peak it had reached twenty years earlier.

Over the next decade, the Japanese economy grew at the rate of 0.96 per cent per year.[32] This was primarily because of the deflationary scenario (where prices remain flat or fall) that resulted in the aftermath of the stock market and the real estate bubbles being pricked. The wholesale price index went up by 0.2 per cent in 1991 and fell by 1.5 per cent in 1992.[33] As Richard Duncan writes in *The Dollar Crisis*:

> All credit bubbles ultimately end in deflation because the purchasing power of the public does not increase quickly enough to absorb the surge in production that results from extended periods of easy credit. In other words, the ability of the public to buy does not increase in line with the capacity of the industry to produce. When product prices begin to fall, debtors find they are no longer able to pay interest on their debt. Bankruptcies follow, credit contracts, and the economy enters recession. The Japanese bubble ended the same way.[34]

In 1993, the Japanese government tried to create economic growth by announcing an additional budget of 13 trillion yen. It tried to keep reviving the economy by spending more money, but economic growth remained flat and the government ran up a lot of debt in the process. Nearly ten years later in 2001, the Japanese state debt stood at around 666 trillion yen, or $5.6 trillion.[35]

As stock and real estate prices fell, a lot of loans were defaulted. By 2001, Japanese banks were sitting on bad loans worth 32 trillion yen or $266 billion.[36] Instead of allowing companies to fail, the Japanese banks at the heart of keiretsu kept on lending. This ensured that the cleaning

up of the system, where bankrupt firms were simply allowed to go under, never really happened. The economy never really recovered.

At the heart of the Japanese bubble was the way the international financial system had evolved with the dollar at the centre. In the days of the gold standard, any differences had to be settled in gold. If Japan exported more than it imported from the US, the US had to settle the difference in gold. Under the system that prevailed, this was not the case.

Japan paid the US in dollars for its imported goods. The US also paid Japan in dollars for its own imports. The only difference was that Japan had to earn the dollars through its exports, whereas the US could simply print them. If the system had been gold-based, the US could not have kept importing goods from Japan without matching it with sufficient exports because it would have run out of its gold reserves one day.

But under the prevailing system, the US kept running a trade deficit with Japan, leading to the dollars flooding Japan, entering the Japanese banking system, and setting off a lending boom, which finally led to bubbles in the stock market and the real estate market.

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For an exporter, the exchange rate is a very important constituent of business. If the exporter's home country's currency starts to appreciate, it is not good for his business. This was a major problem for the Japanese exporters after 1971 when the yen began to appreciate against the dollar. Before the Bretton Woods Agreement stopped working, one dollar had been worth 360 yen. By the end of 1980, one dollar was worth 203 yen. The yen depreciated in the following years, and one dollar was worth 251 yen at the end of 1984. But things changed again and by the beginning of 1988, one dollar was worth 120 yen. In August 1993, one dollar was worth 101 yen,[37] and by April 1995, one dollar was worth 79.75 yen.[38]

Over a period of around twenty-five years, the value of the dollar had decreased from 360 yen to around 80 yen, or by around 78 per cent. What this meant was that the cost of Japanese labour had gone up more than four times during the same period in dollar terms. Let us understand this through an example. Say a Japanese worker was being paid a salary of one million yen. In dollar terms, this worked out to $2,778 (one million yen/360) in 1971. For ease of explanation, let us further assume that in 1995 he was still being paid a salary of one million yen. In dollar terms, this salary worked out to $12,539 (one million yen/79.75). This was nearly 4.5 times his 1971 salary.

Let's say the company this worker worked for was into exports and earned all its revenues in dollars. In dollar terms, its labour cost had gone up. Even if we assume that all its other costs had remained the same, the company would have had to increase the price of the product it sold to continue to remain viable. But increasing prices is not always in the hands of those producing the goods. The market should also be ready to pay the higher price, which may not always be the case.

The other option, of course, was to maintain the salaries in dollar terms, or to cut the salary in terms of yen. In 1971, the salary in dollar terms was $2,778. To have maintained this salary in 1995 would have meant that the company would have had to pay the worker a salary of 222,240 yen ($2,778 × 79.75 yen), which was almost 80 per cent lower than the 1971 salary of one million yen.

While the example might be exaggerated, the broader point is simple to see. As the yen appreciated against the dollar, the labour and other costs which had to be met by paying in yen became very high for Japanese exporters. This made their businesses unviable if they did not have enough pricing power to pass on the rise in costs to their end customers.

The Japanese exporters started moving their manufacturing bases to countries whose currencies were cheap with respect to the dollar and whose labour cost was lower than that of Japan. Japanese companies started looking for manufacturing bases in other parts of Asia. South Korean factories assembled Japanese VCRs, and Thai auto part factories sent most of their products to Japanese manufacturers.[39]

The outward-bound Japanese foreign direct investment started increasing from the mid-1980s. In 1986, it surpassed $20 billion. It reached $70 billion in 1989, though it declined to $42 billion in 1991, after the collapse of both the real estate and stock market bubbles.[40]

After the collapse of the bubbles, the lending environment within Japan was not great. Japanese banks started to look for opportunities abroad. They started by extending loans to subsidiaries of Japanese manufacturers who had moved their manufacturing to other parts of Asia. Gradually, their appetite for risk went up, and they started giving out loans to private companies all across Asia. In the years 1995 and 1996, the loans made by Japanese banks all across Asia were at $275 billion, accounting for nearly a third of all international lending within Asia. While a good portion of this money went to companies operating in Hong Kong and Singapore, the Japanese banks were major lenders to the Asian 5 countries: Thailand, South Korea, Malaysia, Indonesia, and the Philippines.[41]

It is ironic that a lot of these loans were being made to the real estate sector which used overvalued property and stocks as collateral. But having just gone through a real estate bubble, why did the Japanese banks make such a mistake again?

Crony capitalism was at work. The Japanese banks did not lend directly to Thai real estate companies. They lent dollars to Thai finance companies, which, in turn, lent baht (Thai currency) to Thai real estate companies. The owner of the finance company was typically a relative of a minister or some senior government official. The Japanese banks thought that with this structure in place, they had extra protection and that there was no way they could lose money because the minister or the government official would definitely come to the rescue of the finance company in case of any trouble.

By 1993, Japanese and other banks were falling over one another trying to lend money in the Asian 5 countries. Soon there was an excess of supply in the property market in Thailand. The building boom led to office space in Bangkok increasing by 400 per cent between 1986 and 1995 and rents crashing. The joke of the day was that the crane was the national bird of Thailand.[42]

What helped Thai borrowers was the fact that the baht was pegged to the US dollar, with one dollar equal to 25 Thai baht. The value of any loan that they took did not vary. If they borrowed $1 million or 25 million baht, that is where it stayed. If the baht had been allowed to float against the dollar, this would not have been the case.

Let us try and understand what this means through an example. At the time of borrowing, one dollar was equal to 25 Thai baht. A $1 million loan was equivalent to a loan of 25 million Thai baht. When it was time for repayment, let us assume that the value of the dollar had appreciated to 30 Thai baht. In order to repay a loan of $1 million, the borrower would now need 30 million Thai baht instead of the 25 million Thai baht he had borrowed initially.

A similar logic worked for the other Asian 5 countries which had also pegged their currencies to the US dollar. The Philippine peso was pegged at 25 pesos to the dollar. The Malaysian ringgit was pegged at 2.5 ringgit per dollar and so was the Indonesian rupiah, which was pegged at 2,030 rupiah to the dollar. The fixed exchange rate was another factor which made borrowing from Japanese banks attractive.

There was a flood of dollars coming into Thailand and the five other Asian countries. Money was coming through the FDI (foreign direct investment) route, with Japanese companies looking to set up factories.

Money was also coming in through the bank-lending route, with

Japanese banks falling over one another to lend money. This inspired European and North American banks to lend in these countries.[43]

In 1994, the US government arranged for a $28 billion bailout for Mexico through the IMF and the Bank for International Settlements.[44] The bailout money was to be used by the Mexican government to pay off its creditors, which were primarily American banks. This was a clear signal to banks lending in the Asian 5 countries that if things did go wrong, the IMF would come to the rescue. Moral hazard, or the tendency to take on increased risk primarily because the party taking on the risk would not have to bear the costs associated with it, was at work again.

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Money also came into the other Asian 5 countries through what is known as the portfolio route, that is, international investors brought money into these countries to invest in their stocks and bonds. Around $70 billion came into the Asian 5 countries through this route between 1994 and 1996.

Before foreign money started to come into these countries, the firms in these countries used to borrow from domestic banks with which they had long-term relationships. This worked well for the banks because having close relationships with the firms they lent to ensured that they knew what was really happening inside the firm. This gave the bank a clear idea of how well the firm was using the loan it had been granted. Since there was a relationship in place, it also meant that the banks had to keep supporting the company even when it was not in a position to repay the loan. Firms normally repaid their loans because they knew that if they did not, other banks would not lend to them, given that most of the lending was relationship-based.[45]

Over a period of time, as the Asian 5 economies started growing at faster rates, they needed more money than the domestic banks could provide. This meant they borrowed from abroad. The Japanese banks were more than happy to help.

The trouble was that the foreign banks, unlike the domestic banks, had no clue of what was really happening inside these firms. These banks were not willing to take the risk of lending long-term to the firms in the Asian 5 countries. They hedged their risk in various ways. The lending was largely short-term. The loans were given out for a period of thirty to ninety days and then rolled over. This ensured that banks could typically pull out a loan at very short notice.[46]

What the foreign banks did was that they lent in dollar terms. Even though the respective values of the Asian 5 currencies were fixed against the dollar, the foreign banks were not willing to take on any exchange rate risk. Let us try and understand this through an example. A foreign bank decided to lend $1 million to a Thai finance firm in Thai baht. At the time of lending, one dollar was worth 25 Thai baht. The bank converted the $1 million into Thai baht and handed them over to the Thai finance company.

Just at the point when the Thai firm had to repay the loan to the foreign bank, the Thai government decided that it no longer wanted to maintain the fixed value of the baht against the dollar and let it float. The baht fell to 30 a dollar. The Thai firm had been paying interest to the foreign bank over the period of the loan and now needed to repay the principal. It repaid the 25 million baht that it owed. When the foreign bank converted this money into dollars, it got only $0.83 million and faced a loss of 17 per cent on the loan. By lending in dollar terms, the foreign bank passed on the exchange rate risk to the local Thai firm or the bank it was lending to.

Foreign banks did not lend to local companies. They lent to a bank or a finance company, which in turn, lent to companies in the Asian 5 countries. If the foreign bank lent directly to a company and the company defaulted, there was not much that it could do to recover that money. But by lending to a bank or a finance company, the foreign banks brought the governments of the respective countries into the picture. If a situation arose wherein a large number of domestic firms were not in a position to repay loans to domestic banks, it would mean that the domestic banks would be in trouble and not be able to repay the loans they had taken from foreign banks. It was most likely that the government would then come to the rescue of the domestic banks and in the process, the foreign banks would also be repaid.[47]

This much money coming in led to a situation wherein the international reserves of these countries went up at swift rates. This was primarily because the dollars coming into the country (through FDI, bank lending, portfolio route, exports) were rising faster than the dollars leaving the country (through imports). Take the case of Thailand. The international reserves of the country went up from $1.9 billion in 1984 to $37.7 billion in 1996. The central bank of Thailand had to buy dollars coming in by selling Thai baht so as to maintain the dollar–baht exchange rate. This flooded baht into the financial system.

With all this money coming in from abroad, the money supply in Thailand went through the roof. The total money supply went up from

around 500 billion baht in 1984 to around 3,750 billion baht in 1996.[48]

With so much easy money going around, there was a massive expansion of loans in the Thai financial system. While some of these loans went into building actual apartments and office space, a fair amount went into sheer speculation in real estate and the stock market.

The domestic banks and financial firms were flush with funds from foreign banks, and were falling over one another to lend money. This meant that they did very little scrutinizing while giving out loans, unlike earlier.

When firms borrowed money earlier, they had the fear of being cut off by the bank. They exercised some caution in what they did with the borrowed money. But with so much easy money going around, caution was totally abandoned.[49]

By the mid-1990s, the Thai economy was looking a lot like the Japanese economy of late 1980s, with an overvalued real estate and stock market.

The bull run attracted a lot of portfolio money into Thailand. Interestingly, this was the time when developing countries had been rechristened 'emerging markets'. This was a neat branding trick, if ever there was one, and it led to the belief that emerging markets were the new frontier of financial opportunity. Between 1986 and 1995, the amount of money managed by international mutual funds dedicated to the emerging markets increased from a minuscule $1.9 billion to $132 billion, with the number of emerging-market-dedicated mutual funds increasing from twenty-eight to 1,278.[50]

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During the period 1989-90, there was a mild recession on in the US. In the aftermath of the Dow falling by 22.6 per cent in a single day, Alan Greenspan had flooded the market with money to ensure that there were no further problems. As the system stabilized, Greenspan had to take steps that would gradually suck out the money that had been flooded into the American financial system, or it could have led to high inflation. The Federal Reserve started to sell government bonds to ensure that the money was gradually withdrawn from the financial system.

When the Federal Reserve sells government bonds, it gets paid by banks and other financial institutions operating in the market. The amount of money floating around in the financial system goes down. Money becomes more expensive and accordingly, the federal funds rate also goes up. By doing this, Greenspan had ensured that by February

1989, the federal funds rate had reached 9.75 per cent. The federal funds rate has a direct impact on short-term interest rates on loans maturing in one to five years.[51] When the federal funds rate goes up, the short-term interest rates go up and vice versa. Typically, loans maturing in a period of one to five years are given by banks to finance the buying of appliances, cars, furniture, or what economists call consumption. High interest rates typically slow down consumption, which, in turn, slows down the overall economy.

By the start of 1990, the American economy was clearly in a recession. Greenspan started cutting interest rates and the federal funds rate was at 5.75 per cent by July 1990.[52] But the economy did not pick up immediately, primarily because in August 1990, Iraq attacked Kuwait. As Kuwaiti oilfields stopped pumping oil, the price of oil doubled to a peak of $46 per barrel in October 1990.[53]

Due to these reasons, 1990 was largely a flat year for the American stock market. And the Dow Jones Industrial Average fell by 4.34 per cent during the course of the year. This was only the second time since 1982 when the Dow had given a negative return. This non-performance of the Dow sent many investors looking for better returns across the emerging markets.

Soon, things were back to normal, as the crisis in Kuwait did not turn into the third oil shock. The Gulf War started in January 1991 and was over by April of the same year. Greenspan kept cutting interest rates, and by April 1991, the federal funds rate was at 3.75 per cent. On 2 July 1991, he cut the federal funds rate to a thirty-year low of 3.25 per cent.[54] The stock market started to rise again and the Dow ended the year at around 20 per cent up.

This style of cutting interest rates whenever the financial system suffered any sort of shock came to be known as the 'Greenspan put'. Greenspan would do this whenever the financial system faced any trouble so that there was enough money going around and this ensured that the stock market never fell for an extended period of time.

As one analyst explained it, 'These actions often had the result of mitigating downside price action, essentially putting a "floor" under the value of equities.'[55] In simple English, this meant that investors in the US came to believe that the Federal Reserve would take decisive action to stop the stock market from falling and at the same time, would not take any action that would prevent it from going up.[56]

Greenspan's way of operating was similar to how a put option, which is a financial derivative, works. If an investor buys a put option, he pays a certain premium for it, as is the case with insurance. This gives him the

option to sell an asset at a certain price, irrespective of the price of that asset in the market at that point of time. Let us say an investor buys a put option to sell a stock at $100 and pays a premium of $2 for this to another investor who writes the option. This put option gives the investor the right to sell the stock to the option writer during the period of validity of the option for $100, irrespective of the price in the market. Even if the price of the stock falls to $80, the investor can still sell the stock at $100 to the option writer.

If the price of the stock at the point of time the investor wants to sell is greater than $100, then he can sell the stock in the market rather than sell it to the option writer. So, come what may, the investor cannot sell the stock below $100. This leads to a floor on the price. The Greenspan put worked in the same way and led to the belief that come what may, Greenspan would ensure that the stock market did not fall.

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The Dow continued to do well and rose 21 per cent between 1992 and 1994. The year 1995 would turn out to be a landmark year for the Dow. On 23 February, it would cross 4,000 for the first time. It kept rising and closed at 4,702.73 on 7 July.

But things would change. On 9 August 1995, a company called Netscape began to trade on the stock market. The demand for stock for the first two hours was so high that trading could not begin. The stock which had been priced at $28 per share rose to $74.75 per share during the course of the day and finally closed at $58.25 by the end of the day.[57]

When the stock exchange closed for the day, Jim Clark, the owner of the company, was worth $566 million. Twenty-four-year-old Marc L. Andreessen, the inventor of the software at the heart of Netscape, was worth $58 million.[58]

When Netscape decided to sell its shares to investors, it was not making any profit. Its top product, Netscape Navigator, was a browser that could be used to log on to the Internet, and had 75 per cent of the share of the browser market. The company gave away this browser free to individual users with the hope of making it the industry standard. It hoped to make money by charging companies which would use the browser. Since it gave away its main product largely free, the company incurred a certain loss. But investors were still ready to pay $74.75 for a share of a company which had a revenue of $16.6 million for the first six months of the year, and losses amounting to $4.31 million.[59] What

worked for Netscape was the fact that its revenues were growing very fast. They grew from $5 million in the first quarter of 1995 to more than $10 million in the second quarter, $20 million in the third and $40 million in the fourth. Investors had never seen such fast growth and it was why they were willing to pay the price they did for the stock of a company which was not making any money.[60]

As former Morgan Stanley analyst Andy Kessler writes in his book *Wall Street Meat – My Narrow Escape from the Stock Market Grinder*:

> The Netscape IPO scared the hell out of me … It scared me because it was worth so damn much. The market was valuing Netscape at $2.2 billion. This for a brand new software company that had never really been tested … The boom was starting. Business was there for the taking. In the post-Netscape IPO boom, quality was never really an issue. Investment bankers used to insist on two consecutive quarters of profits before taking a company public. Now suddenly, it was all about growth. How quickly can you grow sales? If you are doubling, we'd be happy to take you public … It was the old 'late night at a bar' syndrome. If the only women who will talk to you are below your standards, lower your standards.[61]

Netscape began a trend in which of a lot of companies with near-zero revenues and no profits were able to sell their shares at astonishingly high prices. The broader stock market also rose at a fast pace. The Dow closed the year 1995 up 33.5 per cent from the close of the previous year. This was the highest return that the Dow had delivered in a single year since 1975 when it had delivered a return of 38.3 per cent. The tech-oriented NASDAQ Composite Index gave a slightly higher return of 37.6 per cent during the year.

Money moves to the point of highest return. When the American stock market had just delivered an astonishingly high return of more than 30 per cent in a single year, there was no point in American and other big investors looking for good investment opportunities all over the world.

The investors were initially worried about the fact that the dot-com companies which had become the darlings of the stock market hardly made any money. But as George Soros, one of the greatest investors of this age, says, most money is made by investing in an early stage bubble.

Money moved back to where it had come from. In 1995, the fascination for investing in emerging markets started to decrease.

International investors sold out of these markets, and stock markets in Thailand, South Korea and the Philippines fell by 10 per cent.[62] The Dow continued to do well and gave a return of 27 per cent in 1996. International investors withdrew money from stock markets like Thailand and South Korea, which led to these markets falling even further. In 1996, the Thai stock market was down by a huge 37 per cent. And South Korea followed it closely, down 33 per cent.[63]

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Japanese banks never really cleaned up the mess that had been caused by the real estate bubble that had burst in the early 1990s. As Ruchir Sharma writes in *Breakout Nations – In Pursuit of the Next Economic Miracle*:

> At its peak, Japan accounted for 40 per cent of all the property value on the planet, but instead of collapsing, the price of real estate slowly declined at a 7 per cent annual rate for two decades, ultimately falling by a total of about 80 per cent. There was never a major round of foreclosures or bankruptcies, as the government kept bailing out debtors, ruining its own finances.[64]

With the government bailing out debtors, the losses on the books of the Japanese banks had been limited. The problematic loans of banks in 1995 stood at 29.2 trillion yen or $232 billion.[65] Most Japanese banks at that point of time did not meet the minimum capital requirements set by the Bank of International Settlements (BIS).

A bank takes deposits at a certain rate of interest and lends those deposits out as loans at a higher rate of interest. The difference in these interest rates is the profit that the bank makes. But banks also need to ensure they have enough money with them against which they can adjust any losses that might arise. This is referred to as capital and consists of the money raised through selling shares to the public, the premium charged on such shares, very long-term debt raised by the bank, and profit that has been retained over the years after paying dividends to the shareholders.

The BIS required banks to maintain a capital adequacy ratio of eight per cent of their risk-weighted assets. Japanese banks did not meet this requirement. While this did not impact their business within Japan, not meeting the standard meant that they would not be able to continue lending in the lucrative international loan market.

Following the BIS norms meant that the banks would have to adopt a

new definition of what problem loans meant, leading to problem loans going up to 76.4 trillion yen or $610 billion. This formed nearly 12 per cent of the loans given by all Japanese banks.[66] The Japanese banks had a major problem on their hands, and the last thing they wanted was more problem loans accumulating on their balance sheets. They had first-hand knowledge of the Japanese bubble and could see the same thing repeating itself in the Asian 5 countries.

Any losses in these Asian 5 countries would have meant that the Japanese banks would have had further trouble meeting the BIS minimum capital adequacy norms. In 1996, the Japanese banks more or less stopped giving loans to firms in Thailand and South Korea. With the stock markets falling, a lot of South Korean investment banks and Thai finance companies started to go bust. This led to the Japanese banks starting to withdraw their loans from the region. When Thai finance companies started to get into trouble in March 1997, the Japanese followed it up by withdrawing loans of nearly $8.6 billion from the region over the next six months.[67] Since loans were short-term in nature, the Japanese banks could quickly withdraw them. But as the Japanese banks withdrew their loans, another problem crept up.

In order to maintain the fixed exchange rate, the Thai central bank had to manage the total amount of baht available in the foreign exchange market at any point of time. When there were not enough Thai baht in the market and there was a danger of the baht gaining in value against the dollar, the Thai central bank sold baht to ensure that the exchange rate did not move. When there was a surfeit of baht in the market, the central bank bought them in order to maintain the exchange rate of 25 Thai baht to the dollar.

As portfolio investors and banks were withdrawing money from Thailand, they were selling baht and buying dollars. In the normal scheme of things, this would have led to the market being flooded with baht, and as a result, it would have lost value against the dollar.

But the baht was pegged to the dollar. The Thai central bank had to defend this rate. What this meant was that when foreign investors were selling the Thai baht to buy dollars, the central bank had to sell dollars to buy baht. This ensured that there would not be a surfeit of baht or a shortage of dollars in the market, and the exchange rate would be maintained.

But this strategy could not be run endlessly, simply because the Thai central bank did not have access to an unlimited amount of dollars.

The other option was to just let the foreign exchange market operate on its own and stop trying to defend the baht. But that was not a

politically feasible option given that a large part of the borrowings of Thai firms was in dollar terms and allowing the baht to depreciate against the dollar would mean that the value of their borrowings would go up.

It soon became clear that the Thai central bank could not keep defending the baht forever and would have to eventually let it go. Sniffing a good trade, hedge funds jumped in. They borrowed baht and sold them to buy dollars, hoping to make a killing in the process. How did this work? Let us say that a hedge fund borrowed 25 million Thai baht and sold them to buy dollars. At the exchange rate of 25 baht to a dollar, it got $1 million in the process.

The idea was that eventually the Thai central bank would have to stop defending the baht. If that happened, the baht would depreciate and fall to, let us say, 30 baht to a dollar. The hedge fund would make money in the process. At 30 baht a dollar, $1 million would be equal to 30 million baht. The hedge fund would make a profit of 5 million baht (30 million baht – 25 million baht) or around $167,000 (5 million baht/30). It would have to pay some interest on the Thai baht it had borrowed; whatever remained would be profit.

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In May 1997, the finance minister of Thailand was fired after he failed to arrange the merger of Finance One, the largest Thai finance company, which was in trouble, with Thai Danu Bank, a mid-sized bank. The new finance minister made a secret visit to the central bank and realized that the country had more or less run out of dollars in trying to defend the dollar–baht exchange rate.[68] The central bank had run through nearly $33 billion of foreign exchange reserves trying to defend the exchange rate.[69]

Another $8 billion had been used by the central bank to prop up struggling Thai finance companies. With the real estate prices in Bangkok crashing, the Thai banks and finance companies were in trouble with bad loans of around $15.5 billion.[70] With the central bank more or less having run out of dollars, Thailand decided that there was no longer any point in trying to defend the baht or to prop up its troubled finance companies.

On 2 July 1997, Thailand decided to stop supporting the baht and let it fall. It was estimated that the baht would fall by around 15 per cent, but instead, by the end of July, it had already fallen by 20 per cent to 30 baht a dollar.[71] A year later, one dollar was worth 41 baht.[72]

The crisis soon spread to the other Asian 5 countries. With the Government of Thailand refusing to rescue its finance companies, the Japanese banks and the other international banks made a run for their money all across the region. The Japanese investments in the Asian 5 countries had declined to $74 billion by mid-1998. This was a fall of $23 billion over one year.[73]

With the Japanese banks getting out of the region, the other banks followed. This led to currencies of the other Asian countries also coming under tremendous pressure. Within two weeks of Thailand setting the baht free, others followed. The Philippine peso's peg with the dollar broke on 14 July 1997. The peg of the Indonesian rupiah and the Malaysian ringgit also broke the same day.[74] With their pegs broken, all these currencies lost value against the dollar.

A year later, the Indonesian rupiah was at 14,150 to a dollar. It had been at 2,380 to a dollar earlier. The Malaysian ringgit was at 4.1 to a dollar, down from 2.5. The South Korean won was at 1,290 to a dollar, down from 850. And the Philippine peso was at 42 to a dollar, against 26.3 a year earlier.[75]

As was expected, the IMF soon intervened and came to the rescue of Thailand on 20 August 1997 with a package of $4 billion.[76] By this time, the foreign exchange reserves of Thailand had fallen to $800 million from around $39 billion in December 1996.[77] The IMF lent on the condition that Thailand raise its taxes including the value added tax from 7 per cent to 10 per cent. The logic being that the crisis in Thailand was because of the budget deficit run by the government, which, in turn, had led to huge debts. This was a specious argument because the government debt at that point of time stood at $6.8 billion, or just 4.1 per cent of the GDP.[78] These measures were essentially to ensure that Thailand would be able to generate enough surplus to pay off the loan which the IMF had granted.

While Thailand and the other Asian 5 nations were responsible for the crisis by encouraging crony capitalism, they were not the only ones to blame. The main reason for the crisis was the trade surpluses that Japan had been running with the rest of the world. Its exports, particularly to the US and some other parts of the world, were much more than its imports. This had led to a situation wherein a lot of money came into Japan and was responsible for creating the Japanese real estate and stock market bubbles. Even after the bubbles burst, the money still kept coming into Japan. Japanese banks had to do something with that money, given the limited opportunities in Japan.

They first started giving out loans to the subsidiaries of Japanese

manufacturers, who had been opening factories across the Asian 5 countries to lower their labour costs. The Japanese banks then realized that they could make more money by giving out loans in these countries than they could in Japan, where interest rates were lower in comparison. A lot of reckless lending followed, encouraged by the fact that the IMF had come to the rescue of international banks which had lent money recklessly in Mexico. This encouraged other international banks to jump into the lending fray as well, creating bubbles in the real estate as well as stock markets across the Asian 5 countries.

As Richard Duncan writes in *The Dollar Crisis* in the context of Thailand:

> Just as in Japan, the bubble in Thailand was caused by extraordinary amounts of foreign capital entering the banking system and resulting in excessive credit creation … Foreign capital entered the kingdom in various ways: as direct foreign investment, as portfolio investment in the stock market, as bank loans, and as deposits which were placed in Thai financial institutions to take advantage of the high interest rates on offer … It should be noted that the largest part of the capital entering Thailand came from Japan, which attempted, but ultimately failed to prevent its enormous current account surpluses from causing domestic overheating by exporting huge sums of capital abroad. It must be recognized that Japan's giant current account surpluses after 1982 not only created the bubble economy in Japan but were also responsible for the bubble economies which developed all across Asia.[79]

At the heart of the financial crisis was the paper money standard, or the dollar standard that had evolved. Earlier, a country running a trade deficit with another country had to settle the deficit in gold. This meant that no country could have kept running trade deficits for an extended length of time because they would have ultimately run out of gold. They would have had to cut down on their imports or export more. But under the dollar standard, the US could keep importing as much as it wanted to because it had to pay the other countries in paper dollars. It could print as many dollars as it wanted. The other countries needed to earn these dollars through exporting goods and services.

The US had no incentive in cutting down on its imports. This meant a flood of dollars coming into countries like Japan and causing a bubble there. Gradually, all these dollars coming into Japan started going into

other countries in Asia, such as Thailand and South Korea. The money coming in was much more than the investment opportunities available in these countries. This drove up the prices of real estate and stocks and led to bubbles similar to the ones in Japan. Once the Japanese banks saw what was happening, they started to exit these countries lock, stock and barrel.

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The big international banks were discovering the international version of the Greenspan put. The big banks had realized that it made sense to go into the emerging nations of the world, lend recklessly and be assured that if things went wrong, the IMF would come to their rescue and provide a loan to the government of the country in which the trouble had erupted. The government was then expected to use that money to pay off the loans that the international banks had given to private firms in that country. After that, the government was expected to repay the IMF by raising taxes and cutting down on expenditure, contracting economic growth in the country.

As Nathan Lewis writes in *Gold – The Once and Future Money*:

> The IMF was bailing out banks in developed countries on their loans to the Asian private sector. It is a stretch even to say that the IMF covered the losses of the big money-centre banks, since, after all, the IMF was making loans, not gifts, to the governments of the developing countries. The loans had to be paid back. The foreign money-centre banks were bailed out by the taxpayers of Thailand, [South] Korea, Indonesia, and the Philippines – all while the IMF pressurized governments of those countries to bankrupt their own domestic financial institutions and corporations by the dozen.[80]

This was moral hazard at its very best. Governments in the Asian 5 countries had to cut down on expenditure to pay off the IMF loans. This had a huge negative impact on economic growth. The GDP of Indonesia fell by close to 25 per cent. This was similar to the fall experienced by the US during the Great Depression. But the GDP in the US fell by 25 per cent over a period of nearly four years from late 1929 to 1933. Indonesia experienced the fall in one year.[81]

Other than Indonesia, the Asian 5 countries recovered quickly. They did this by letting the value of their currencies fall against the dollar. This made their exports very competitive in the world market. They also

replaced their imports with cheaper domestic production.

As Raghuram Rajan writes in *Fault Lines – How Hidden Fractures Still Threaten the World Economy*: 'The supercharged export-led growth strategy they have subsequently followed not only increases the burden on the rest of the world to create demand for their goods, but it also accentuates the domestic distortions.'[82]

Exports from these countries needed a market which they found in the US and countries across Europe. As dollars earned from these exports started to come in, the foreign exchange reserves of these countries started to go up, given that they had managed to control their imports. The countries could either let these dollars lie idle in the vaults of their central banks or invest them somewhere safely and earn some return on accumulated reserves. As we shall see in the coming chapters, this money ultimately found its way back into the US. To some extent, this helped maintain low interest rates in the US and fuelled another bubble and a consumption boom in the years to come.

9

Irrational Exuberance

Victor Niederhoffer, a hedge fund manager who went bust twice, carried out a very interesting study in his book *The Education of a Speculator*. In this study, he tried to measure the number of panics that the American stock market had seen across various decades. He defined panic as a situation wherein the Dow Jones Industrial Average, the country's premier stock market index falls by 10 per cent or more from the high it had attained during the previous thirty days. The number of panics had peaked at thirty-eight in the 1930s. The 1970s had seen nine panics and the 1980s had seen four panics. But what took the cake was the 1990s. The period between 1990 and 1996 had just seen one panic.[1]

The Greenspan put had more or less ensured that the Federal Reserve cut interest rates at the right moment at the slightest sign of trouble. With this formula in place, stock market investors had started to expect that the stock market could now only go one way and that was up.

The Dow had given a return of 33.5 per cent in 1995. But the NASDAQ Composite Index of the NASDAQ[2] stock market went up by 41.5 per cent during 1995. Most technology companies were listed and traded on NASDAQ.

In early April 1996, the internet search engine Lycos was listed. The shares went public at $16 per share and they closed at $22 at the end of the first day's trading. A week later, on 12 April 1996, another search engine company which had sales of $1.4 million and losses of $643,000, sold its shares to the public. This company, named Yahoo, had been in business for just ten months. The firm had some legitimacy primarily because it was backed by Don Valentine's Sequoia Capital, a venture capital firm which had earlier backed the likes of Apple and Microsoft.

The shares of the company reached a high of $43 on the listing day, valuing the company at $1 billion.[3] When the FOMC met on 24 September 1996, the economy had started to heat up. Corporate profits had been good during the course of the year. Unemployment was also below 5.5 per cent and wages were rising. Economic growth was strong and the GDP was rising at an annual rate of 6 per cent at that point of time in the US.[4] These were conditions which, in the normal scheme of things, would have led to the Federal Reserve raising the federal funds rate.

The FOMC, led by Greenspan, had raised the federal funds rate when the rate of unemployment in the US approached six per cent in 1994 and early 1995.[5] But in September 1996, Greenspan was not convinced and was coming around to the idea that the US was in the midst of a technological revolution and this revolution had increased the ability of the economy to expand. He felt that the productivity, or the output per hour of labour, had been growing in the US, but that the government statistics did not capture it. Raising interest rates would be a mistake. He proposed a status quo. The FOMC went with him largely and decided to maintain the federal funds rate.

Even though Greenspan was convinced about a technology revolution increasing American productivity and pushing up economic growth, he was not really convinced about the rate at which the stock market had been rising, or so it seemed briefly. Between 1987, the year Greenspan took over as the chairman of the Federal Reserve and 14 October 1996, the Dow had gone up three times. It was quoting at around 6,000. During the same period, the more technology-oriented NASDAQ had gone up around three-and-a-half times. American stocks at that point of time were worth $9.5 trillion, or around 120 per cent of the GDP. This was up from 60 per cent of GDP in 1990.[6]

One way of slowing down a galloping stock market would have been to raise the interest rate, but that would have had an impact on other sections of the economy as well. So Greenspan decided to tackle this problem in his own unique way.

On 5 December 1996, he gave a speech titled 'The Challenge of Central Banking in a Democratic Society'. Towards the end of his long speech, Greenspan, in a fairly roundabout way, said that he felt that the stock markets in America were overvalued and looked to be going the Japanese way:

> Clearly, sustained low inflation implies less uncertainty about the future, and lower risk premiums imply higher prices of stocks

> and other earning assets. We can see that in the inverse relationship exhibited by price/earnings ratios and the rate of inflation in the past. But how do we know when *irrational exuberance* [emphasis added] has unduly escalated asset values, which then become subject to unexpected and prolonged contractions as they have in Japan over the past decade?[7]

At the end of the speech, Greenspan wondered whether people would understand what he was trying to get at. They sure did. The Japanese stock market, which had opened by the time Greenspan finished his speech, reacted instantly. The Nikkei index dropped 3.2 per cent. The Hang Seng in Hong Kong dropped 2.9 per cent. The DAX (Deutscher Aktienindex [German Stock Index]) in Germany went down 4 per cent and so did the FTSE (Financial Times Stock Exchange) 100 in London. The next day, when the stock markets in the US opened for trading, the Dow was down 2.3 per cent.[8] The NASDAQ Composite Index was down 1.8 per cent at opening. By the close of trading, NASDAQ Composite Index was down 0.9 per cent and had recovered half of its losses. When the stock market opened for trading again on 9 December 1996, after the weekend, it was back trading at the levels it had been at before Greenspan had made his speech about irrational exuberance.

Various explanations have been offered over the years as to why the stock market investors chose to ignore what Greenspan had said. One is that Greenspan did not immediately back his speech with the concrete action of raising interest rates. This argument is not totally correct because Greenspan did raise interest rates a couple of months later, although he did not do anything immediately.

The second reason given is that by the time Greenspan raised the red flag, the market was already irrationally exuberant. It had already formed a mind of its own and was in no mood to listen. As economist Ravi Batra writes in *Greenspan's Fraud*:

> The lure of free lunch is so powerful that it clouds our vision. For once Greenspan had offered words of wisdom, but in doing so he lost his audience. The master bartender wanted his customers to sober up. They wanted more: whiskey, champagne, rum, just bring it on.[9]

The stock market needed a little more than just one Greenspan speech to sober up. A series of interest rate hikes might just have done the trick. But this can only be said with the benefit of hindsight.

Nobody likes to spoil a party that is on. Greenspan did not want to be a killjoy.

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The stock market ignored what Greenspan said totally and charged forward, ending 1996 at 6,448.27. By the time the FOMC met for the first time in 1997, on 4 February, the Dow was well on its way to crossing the 7,000 level for the first time. The tech-heavy NASDAQ Composite Index had risen by 5.8 per cent since 5 December 1996, the day Greenspan had made his speech.

The mandate of the Fed had nothing to do with stock market or investment bubbles. What it needed to be concerned about was inflation and unemployment. It could tackle bubbles if it felt that they were creating inflationary pressures in the economy. But inflation at that point of time was low and stable. The FOMC, which met on 4 and 5 February 1997, decided to keep the interest rate where it was. But Greenspan gave sufficient hints in the discussion that he had with other members of the FOMC that the time to raise interest rates would come sooner rather than later. During the course of the discussion, Greenspan had said: 'We should build in that pro-cyclicality of interest rates that would occur normally … If in the meantime inflation pressures were to build, then still more aggressive action would be required.'[10]

This was basically a roundabout way of letting the stock market know that he did not want to shock the investors by going against the prevailing trend by raising interest rates suddenly. At the same time, he was letting investors know in advance that the Federal Reserve would raise interest rates sooner rather than later.

And that is what did happen. When the Federal Reserve met next on 25 March 1997, it raised the federal funds rate by 25 basis points to 5.5 per cent. Greenspan, during the course of the discussion, used the much-dreaded word 'bubble' once, but it was hidden as usual in his roundabout manner of speaking. As he had said:

> It strikes me that whatever we do; we need above all to make certain that we keep inflation low, risk premiums low, and the cost of capital low … Nonetheless, if we are talking about long-term equilibrium, high market values are better than low market values. What we are trying to avoid is *bubbles* [emphasis added] that break, volatility, and the like, but we are not opposed to the implications of low inflation, which include relatively low risk premiums and fairly strong economic activity. I conclude that

what we clearly need at this stage is finally to move off the dime.[11]

On 25 March 1997, the day of the FOMC meeting, the Dow had closed at 6,876.17. The next day, it closed higher at 6,880.70. From there the fall began and the Dow reached a low of 6,391.69 on 11 April 1997. This represented a fall of 7.5 per cent from 25 March, the day the Federal Reserve had raised interest rates. The NASDAQ Composite Index fell 3.3 per cent during the same period.

This was where the impact of the Federal Reserve rate hike ended and the markets started rallying again. By the end of April, the Dow had closed above the 7,000 level again. The NASDAQ Composite Index was also up 5.3 per cent from its low on 11 April.

This convinced Alan Greenspan that there was no way of figuring when the stock market would have a bubble. From then, he just let the bubble be and did not raise interest rates for quite some time. As he writes in his autobiography, 'We did not raise rates any further, and we never tried to rein in the stock prices again.'[12] The Dow closed the year 1997 up by 22.64 per cent. The NASDAQ Composite gave almost similar returns of 21.6 per cent.

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The Dow and the NASDAQ Composite Index had almost moved in line since Alan Greenspan had taken over as chairman of the Federal Reserve on 11 August 1987. Between then and 31 December 1997, the Dow had given an absolute return of 200 per cent, whereas the NASDAQ Composite had done a little better and given an absolute return of around 252 per cent.

But 1998 would be the year when the NASDAQ Composite Index would race much further ahead of the Dow, as the frenzy for dot-com and technology stocks would take over. In 1998, the NASDAQ Composite gave a return of around 40 per cent, whereas the Dow returned only around half of that at 22.6 per cent.

The broader technology market, represented by the NASDAQ Composite Index, gave a return of a whopping 157 per cent over the two-year period 1998-99. The Dow, which had a few old technology stocks such as Intel, Microsoft (both included on 1 November 1999), and IBM among its constituents, was way behind with a return of 45.4 per cent over the two-year period.

There were multiple reasons for this investor frenzy that drove the NASDAQ Composite Index to astonishingly high levels. But the basic

reason was the bull run. The small investor typically enters the bull run when he has seen the stock market give good returns for a while. Since 1982 and till 1996, the Dow had given positive returns in twelve out of the fourteen years. In eight of the twelve years that the Dow had given positive returns, the absolute return had been 20 per cent or more. This led to more investors entering the stock market. The number of investors in the stock market increased, as many middle-class investors made their first jump into the stock market. Wealthier Americans already owned stocks. Nearly three-fourths of those with financial assets of $500,000 or more had made their first investment in stocks sometime before 1990. Some 33 per cent of the households with financial assets of $25,000 to $100,000 bought their first stock or invested in a mutual fund that in turn invested in stocks between 1990 and 1995. But 40 per cent of those owning financial assets in the range of $25,000 to $99,000, and 68 per cent of those with financial assets of less than $25,000, made their first purchase after January 1996.[13]

Economic theory tells us that more often than not, higher prices dampen demand and lower prices increase demand. But when the stock market witnesses a bull run, investors do not behave like normal consumers. As Maggie Mahar puts it in *Bull! – A History of the Boom and Bust, 1982–2004*:

> In the normal course of things, higher prices dampen desire. When lamb becomes too dear, consumers eat chicken; when the price of gasoline soars, people take fewer vacations. Conversely, lower prices usually whet our interest: colour TVs, VCRs, and cell phones became more popular as they became more affordable. But when a stock market soars, investors do not behave like consumers. They are consumed by stocks. Equities seem to appeal to the perversity of human desire. The more costly the prize, the greater the allure.[14]

What also helped fuel the frenzy was the falling trading commissions on shares. Before 1975, when an investor bought or sold a share, he had to pay a commission of 75 cents per share to his broker. This fell to around 12.5 cents per share when fixed commissions came to an end. As the competition heated up, broker commissions were down to 5 or 6 cents a share by 1989. By 2003, this was down to around 1 cent a share.[15]

The main thing responsible for the fall of broker commissions in the 1990s was the rise of Internet-based stockbroking accounts, which cut

the costs of running the business for stock brokers dramatically. Unlike earlier, when investors had to visit their brokers or call them up to buy or sell stocks, they could now trade in the comfort of their living room or wherever they were. This led to investors buying and selling more frequently than they had in the past.

The Internet also brought to small investors a surfeit of information, both good and bad that was earlier available only to large institutional investors. It was easier for investors to research companies at the click of a button. The Internet made it easier for people who wanted to manipulate the market to spread rumours, and there was not much the regulators could do about it. Internet chat rooms had big finance sections. Individual investors started to trade information on why they thought a particular stock would go up or down. Sometimes the tips or the information that these investors put up on the chat room were correct. But at other times, it was totally made up or unimportant information pushed as something very important.

A very good example of this phenomenon was a stock called Books-A-Million. Books-A-Million was the third-largest book retailer in the US with 174 bookstores across the country. In 1996, to take on the likes of Amazon, the company had launched the website 'www.booksamillion.com'. The website was not very popular. By October 1998, it did not feature in the top 8,000 websites as far as Internet traffic was concerned. During the same period, 'www.amazon.com' had attracted 8.2 million visitors and was one of the top websites in the US as far as Internet traffic was concerned.[16]

In November 1998, Books-A-Million decided to spruce up its website and came up with a better-looking new website which had more colour and better search capabilities. At the same time, it decided to cut the prices of books on sale. Investors in chat rooms on websites like Yahoo took note of this. On 25 November 1998, the stock opened 38 cents up from the previous closing price of $5 per share. During the course of the day, individual investors kept pumping up the stock on various chat rooms. One investor even said that price of the stock would touch $100 by Christmas. All this ensured that by the end of the day, the price of the stock went up to $12.94. The trading volume was at thirty-three million shares. The next day was Thanksgiving and so the stock market was closed. But the optimism about the stock continued in chat rooms.[17]

On 27 November, a Friday, the price shot up to $19.25, with 283,000 shares traded within minutes of opening. The stock closed the day at $38.94. By this time, the stock had gone out of the hands of institutional players and was in the hands of day traders. Some

institutional investors were screaming 'What's the big deal about having a website? Everyone's got one!' They really could not bet against it. Such was the strength of the uptrend. On 27 November 1998, some thirty-three million shares of Books-A-Million were traded on the NASDAQ, making it the most traded share on NASDAQ. Within seventeen minutes of the trading opening on Monday, 30 November 1998, the price of the stock was up to $46. The stock had risen by around 900 per cent in three trading days.[18]

After it touched a price of $46, sanity returned. Investors started selling the stock and the price was down to $30 within a couple of hours of trading.

In fact, such was the power of chat rooms that people of all kinds had got involved. In September 2000, the Securities and Exchange Commission (SEC) settled a case with a fifteen-year-old known as Jonathan Lebed. Lebed had used scores of fictitious profiles to post recommendations on stocks across various Yahoo message boards. He had posted messages eleven times between September 1999 and February 2000, and each time triggered a chaos in the stock market. He had left sell orders in advance. The average daily trading volume of the small companies he had posted information on was around 60,000 shares. On days when he posted information on these companies, the trading volume soared to more than a million shares.[19]

Lebed also made good money from his trades. The smallest amount he made during that period was $12,000 and the biggest was $74,000. The SEC had fined him an amount which was equivalent to the total gains he had made through this modus operandi, along with an interest on that amount. The total fine thus came to $285,000.[20]

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While false information on Internet chat rooms had played its part in fuelling the boom, there were other factors at work as well. One was the rise of Consumer News and Business Channel (CNBC). The Financial News Network (FNN) was the first television channel to focus exclusively on the stock market. It was launched on 30 November 1981. Around a decade later, FNN was more or less bankrupt. Even though it had run out of money, it had a good distribution system in place, and NBC (owned by General Electric) bought it in an auction. NBC already had CNBC by then, having launched it in 1989. But it was not really a serious effort. With the infrastructure and distribution of FNN coming in, CNBC started to find its audience after 1993.

Roger Ailes was brought in as president of CNBC. Ailes had been media consultant to the presidential campaigns of Richard Nixon, Ronald Reagan and George Bush Sr. Ailes brought in Jack Reilly who had for many years been the executive producer of a show called *Good Morning America*. Between Ailes and Reilly, they had a good feel for what would make CNBC work. They decided to treat the daily broadcast of CNBC like a sporting event. The logic was that what worked for ESPN should work for CNBC as well, since the audience was constituted by working-class males. CNBC decided to have a pre-game show, a half-time show and a post-game wrap up.[21]

In 1995, CNBC launched its pre-game show called *Squawk Box*. The hosts of this show basically made wisecracks at one another and got the viewers ready for the stock market action that was to follow. When the stock market opened, the cameras turned to Maria Bartiromo, who would be reporting directly from the floors of the NYSE. As Maggie Mahar writes in *Bull!*:

> Buffered by a sea of men, shaking her shiny black hair out of her eyes, Bartiromo was the first television journalist ever to report from the trading floor of NYSE. Some fans compared Bartiromo to a young Sophia Loren. Without question, she was both charismatic and gutsy. Ignoring the swarm of white shirts that jostled her, Bartiromo held her own on the crowded floor, breathlessly rattling off tips and touts circulating on the Street that morning, her voice growing hoarse as she shouted into a camera that seemed to hang far above her – making her appear all the more vulnerable and all the more brave, as she struggled to bring her viewers breaking news of what stocks Wall Street's brokerages were promoting that day.[22]

Putting a reporter right in the stock exchange was a part of the experience of making the television viewers feel that they were also a part of the game as much as the professionals on Wall Street were. This move went a long way in breaking down the mystique that had been built around the stock exchange and Wall Street. It told the retail investors that if a 'vulnerable' woman reporter could hold her own among the professionals who invested in the stock exchange, so could they. If ever there was a stage-managed show, this was one.

But there was a basic problem with this format. Stock markets traded around 250 days a year. Companies declared their quarterly results once every three months. Other than that, they had news to share a few other

times in the year. On an average, it is safe to assume that a company would be in the news for around ten days a year.

But with a channel like CNBC, something important needed to happen in the stock market all the time. Reporters and anchors spoke louder and faster than most people do. It also meant creating news when none existed or focusing on an inconsequential piece of news or information and making it sound very important. CNBC ended up doing both.

A particular CNBC favourite was talking about stocks that had gone up or down by 2 per cent during the course of the day and getting experts to come and talk about it. The experts who appeared on CNBC typically advocated holding on to stocks for the long term but would appear on shows to explain why stocks rose or fell by a few per cent in a day.

The louder the CNBC anchors and reporters shouted, the more important the news seemed. Investing in the stock market was made to look like a game in which the viewers had to be at the edge of their seats all the time. As Ian Weinberg, a financial adviser recounts in Eric J. Weiner's *What Goes Up*:

> CNBC would come on and every day they'd have a nice looking fellow named Tom Costello reporting from the NASDAQ. And I think they paid him per word … because he spoke in such a frenzied way that he created this sense of urgency. In reality, what he was saying was Dell was up a quarter or down a quarter based on demand for personal computers. It was the same thing with Maria Bartiromo standing on the floor of the exchange. I can remember being at a golf outing in '99 sitting in the locker room watching CNBC, and she was screaming about the fact that IBM might move into another business. When she was done, about five guys got up to call their brokers and go buy IBM. [23]

Nassim Nicholas Taleb makes this point in *The Black Swan – The Impact of the Highly Improbable* when he says:

> The more detailed knowledge one gets of empirical reality, the more one will see the noise and mistake it for information. Remember that we are swayed by the sensational. Listening to the news on the radio every hour is far worse for you than reading a weekly magazine, because the longer interval allows

information to be filtered a bit.[24]

This edge-of-the-seat investing led to overreactions from investors, which meant that they traded more than they would have normally done. The turnover rate of the NYSE for 1998 was at 76 per cent. This meant that the average investor at the NYSE replaced 76 per cent of his portfolio with newer holdings during the course of the year. So, investors were clearly not investing for the long term. Research carried out on the trading trends showed another interesting trend. Men traded more than women. Given that men were the primary audience of CNBC, this was hardly surprising. Using a sample of 35,000 households which had stockbroking accounts with a large brokerage, the researchers analysed investments for the period of six years between February 1991 and January 1997. They found that men traded 45 per cent more than women. In fact, single men traded 67 per cent more than single women.[25]

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Analysts at various stock brokerage firms and investment banks also helped CNBC. As Andy Kessler writes in *Wall Street Meat*:

> The market opens for trading five days a week … Companies report earnings once every quarter. But stocks trade about 250 days a year. Something has to make them move up or down the other 246 days [250 days minus the four days on which companies declare quarterly results]. Analysts fill that role. They recommend stocks, change recommendations, change earnings estimates, pound the table – whatever it takes for a sales force to go out with a story so someone will trade with the firm and generate commissions.[26]

But by the late 1990s, things had changed. Analysts had figured out that CNBC was a better way of reaching both current and prospective clients. The main job of the analyst was not to drive commissions because competition had ensured that commissions had fallen to abysmally low levels. The main job of an analyst now was to build his brand and drive business for the firm he worked for.

Henry Blodget was a senior analyst with the Wall Street firm CIBC Oppenheimer which was not in the big league of Wall Street firms. Blodget was not the hottest Internet analyst going around. That tag went to Mary Meeker at Morgan Stanley and Abby Cohen at Goldman Sachs.

In October 1998, Blodget brought out a report on Amazon.com. In this report, he had predicted that the stock would go past $150 in a year's time. He added in that report that the stock was worth anywhere between $150 and $500. At that point of time, the stock was quoting at $80. The stock raced past Blodget's one-year target within a few weeks.[27]

The thing with price targets was that even though they were tricky, they had become an essential part of the business at Wall Street over the years. As Kessler recalls:

> For some reason, Morgan Stanley was into price targets. I hated them. To me, they were pure marketing fluff. I would recommend Intel at say, $25. The first question I would get is what is my price target. My answer would be $40 for no particularly good reason. It was high enough to interest investors, but I was guaranteed to be wrong. If it hit $38, it was a great call, but I was wrong. If it went to $60, it was an even better call, but I was still wrong. What usually happened was that if the stock hit $35, I was asked to adjust my price target to $50, so that sales force would have a call to go out with.[28]

Blodget was in a similar situation. His one-year call on Amazon had been beaten within a few weeks' time. Such was the strength of the bull market. His sales team was now badgering him for a new target.

Analysts over the years have developed some models on estimating the right value of a stock. A very basic way is to estimate the future earnings of the company and then calculate the present value of those earnings and that is the right value of the stock. But this method works for companies which are profitable or are expected to be profitable a few years down the line. Most Internet companies, like Amazon, were not making any money at that point of time. Nor were they expected to make money any time in the near future. The market was paying a premium for these stocks on the logic that someday these companies would make a lot of money.

There was no way Blodget could estimate the correct value of Amazon. By 15 December 1998, Amazon was quoting at $242.75, having gone up by 100 per cent since 26 October 1998. Around a month before Blodget had issued his $150 target price recommendation for Amazon, Jonathan Cohen, an analyst at Merrill Lynch had issued a sell report on Amazon. This was at a point of time when the stock was quoting at around $80 and the market value of the company was at $4

billion. Cohen was what you would call an old-fashioned analyst who still looked at Amazon's continued lack of earnings, even though its revenues were growing very fast. Cohen observed that even on the Internet, selling books remained a very competitive, low-margin business. At the same time, the market capitalization of Amazon was twice that of Barnes and Noble, a bookseller which had shops across America and which was actually making money.[29]

By December 1998, nearly three months since Cohen had made his sell recommendation on Amazon, the price of the stock had moved from $80 to $240. In this scenario, Blodget had to come up with a new target price for Amazon, so that his sales team could go in the market and sell the stock.

Blodget, at some level, understood that he was in the midst of a stock market driven more by emotion and momentum. More than the price of the stock, he had to predict investor psychology and where that could take the price.

In a year's time, the price of Amazon's stock could be $500. It could also be $300. Blodget put out a target price of $400, the average of the two extremes of $300 and $500.[30]

Maggie Mahar recounts this situation beautifully:

> By December, Amazon had shot past $200, and his firm's sales team began pressing him for a new target. Blodget felt obliged to pick up a number. Privately, he was confident that Amazon would hit $400 – he just didn't know if he had the balls to say it. But as his very first boss on Wall Street had told him, 'You're not a portfolio manager – you're not trying to sneak quietly into a stock before someone else sees it. You're an analyst: your job is to go out and take a position.'[31]

That is what Blodget did. He took the position that Amazon would hit $400 within a year's time. There must have been hundreds of other analysts on Wall Street who could have said the same thing. It was just that Blodget had the balls to say the right thing at the right time. He told the stock market what it wanted to hear.

Blodget put out his recommendation of Amazon hitting $400 on 16 December 1998. Within minutes, his forecast was travelling around the world. A Bloomberg reporter got a tip and put out the story. Soon, CNBC picked it up. And in no time, the recommendation had hit the chat boards across the various Internet sites. Once that happened, the stock simply went through the roof. Amazon, which had closed at a

price of $242.75 on 15 December 1998, closed 19 per cent higher at $289 on 16 December 1998.

After this, the price of Amazon went on a roll. The stock was split in early January 1999, and the price crossed the $400 level that Blodget had predicted in March 1999, in split-adjusted terms. With this one recommendation, Blodget had arrived.

But time was running out for Cohen at Merrill Lynch. A day after Blodget's announcement, Cohen reiterated his sell recommendation and added that he did not think the stock was worth more than $50. But the stock price kept going up, making Cohen and Merrill Lynch the laughing stock of the market. In a few years, Cohen would be proved right, but by then it would be too late. As Keynes famously remarked: 'Markets can remain irrational longer than you can remain solvent.'

Cohen quit Merrill Lynch in February 1999 (some versions of the story say he was fired). And guess whom he was replaced by? Henry Blodget.

Bringing Blodget on board served two motives for Merrill Lynch. Given that Blodget was essentially positive on the future of Internet stocks, it meant that Merrill could use those positive recommendations to generate more stock broking revenue. When an analyst is negative on a stock, the firm's commissions are limited to only customers who are already trading with the firm, which is not the case when an analyst issues a buy recommendation. In an environment where everybody is positive, nobody likes doomsday predictions and sell calls from analysts. With Blodget on board, his positive recommendations on the dot-com stocks would go down well with Merrill's existing set of customers.

The commissions generated by the stockbroking business had been falling over the years. In the 1990s, the competition from online brokerage firms had pulled commissions down drastically. Even a top-notch firm like Merrill Lynch was generating only $2 billion of revenue through stockbroking commission, from their total revenue of $17 billion.[32]

A major part of the business of Wall Street firms now came from taking companies public. Before the Internet era, any company wanting to go public had to be profitable for a year or two. But such niceties were put on the back burner as more and more Internet firms wanted to go public. The money waiting to be made was so huge that Wall Street would not have missed the opportunity at any cost.

Wall Street worked on a percentage model. It took in 7 per cent of the money raised through an initial public offering as its fee. And this was an era when business was booming. Between the start of the year

and August 1998, Wall Street had taken 370 companies public.[33]

Even with many Internet firms wanting to go public, Wall Street was still not in a bargaining position. The bargaining power was with the twenty- and thirty-year olds, who ran most of these new Internet companies, or the Silicon Valley venture capitalists who had backed them. The youngsters and the venture capitalists did not ask for a cut in Wall Street's fee. What they wanted instead was an assurance that the Wall Street firm would support the price of the stock after it had been listed on the stock exchange.

Of course, this had to be done legally. This was important for the Wall Street firms because new companies wanting to come out with their IPOs looked at this parameter before choosing the Wall Street firm which would handle its public offer.

The way Wall Street handled this was very clever. Before going public, the Wall Street firm promised the company that the in-house analyst of the firm would initiate coverage of the stock a few days after it got listed on the stock exchange. No favourable coverage or a 'buy' rating was promised because that would have been going against the law. It was assumed that the Wall Street firm would have nice things to say about the company it had just taken public.

But just saying good things about a company was not enough. It was important for the market to believe in the good things that were being said. For this to happen, every Wall Street firm needed a superstar analyst whom the investors would believe. Goldman Sachs had one in Abby Joseph Cohen, who was famous for taking a bus to work even after becoming a partner. Such was her optimism for the US and the dot-com boom that by 1997, the media referred to her as the soothsayer who never blinked.[34]

Morgan Stanley had Mary Meeker, who kept telling investors to just keep buying stocks, irrespective of the price they were selling at. Such was the power of the rising market that Meeker could go to any extent to justify investing in equity. Justifying the high price of Amazon even though the company did not make any profit, she said, 'We have one general response to the word "valuation" these days: "Bull market".'[35] While Cohen and Meeker were driving deals for Goldman Sachs and Morgan Stanley respectively, Merrill Lynch had lacked a star analyst who was positive on the dot-com bull market and could help the firm attract Internet companies wanting to go public. Within eleven months of hiring Blodget, Merrill Lynch made good progress and captured nearly 7.8 per cent of the Internet business.[36]

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As the bull run went from strength to strength, dot-com companies continued to list on stock exchanges at atrociously high prices. Take the case of eBay. The stock was offered at $18. And at the end of the first day's trading on 24 September 1998, the stock had closed at around $47.38. By 23 December, it would hit a price of $296, nearly 6.3 times its closing price on the listing day.

Even more astonishing was the listing of 'theglobe.com' on 13 November 1998. The company, which had sold the shares at $9, had revenue of only $2.7 million. Its first trade happened at $87 and within five minutes, the price had touched $97 per share. At that point of time, the company had a market capitalization of $1 billion.[37]

Some of the firms which showed profit did so by inflating their numbers. Take the case of AOL, which was one of the first internet companies to go public. On its first day of trading on the NASDAQ stock exchange, the stock price of the company rose by 28.3 per cent to $14.75 from the $11.5 it had been priced at.[38]

In 1994, the company decided to ignore its marketing costs while calculating its profits. Instead of immediately expensing this cost, the company shifted the marketing cost into the balance sheet and decided to amortize this cost over a period of twelve months. Even twelve months was not enough, and in 1995, it decided to amortize the marketing cost over a period of eighteen months. What this did was that instead of expensing the cost of marketing, one of the major expenses of the company at a single go, the company spread it over a period of eighteen months. In 1996, it further increased the period of amortization to twenty-four months.[39]

This allowed the company to show that it was making more profits or lower losses than it actually was. In 1995, the company incurred a loss of $35.8 million. It had not recognized marketing costs amounting to $77.2 million. In 1996, the company declared a profit of $29.8 million, when it had not recognized a marketing cost, or what it actually called a deferred subscriber acquisition cost, of $314.2 million.

If it had followed conventional accounting measures and accounted for the entire marketing cost up front, the company would have made a loss of $113 million in 1995 and a loss of $284.4 million in 1996. But the aggressive accounting policy that the company followed allowed it to declare a lower loss in 1995 and a profit in 1996.

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During all of the 1980s, there were seven IPOs which had doubled on their first day of trading on the stock exchange. Such was the strength of the boom that in November and December of 1998, there were seven such IPOs.[40]

As the boom went on, more and more such IPOs came to the market. Priceline sold its shares at $16 and ended its first day of trading more than four times higher at $69. The website which basically resold airline tickets and did not own any airplanes was worth more than the entire tangible airline industry put together.[41]

Valuations were reaching crazy levels. eToys, a tiny seller of toys on the web, with revenues of $25 million, was listed on the stock exchange at a market capitalization of three times the value of Toys 'R' Us, a company with tangible business and stores throughout the US and which generated a revenue of $11 billion.

Even though a lot of fund managers and analysts realized what was happening, they decided to go with the flow because no one knew when this madness was going to end. They had to get up and run. For the professional investor, it made sense to just keep going with the herd. By following this strategy, they would do well if everybody else did well. And if the stock market happened to fall, they would do as badly or slightly worse than everybody else. As Keynes said, 'Worldly wisdom teaches us that it is better for reputation to fail conventionally than to succeed unconventionally.' Nowhere is this more visible than in a bubble-fuelled bull run, and the dot-com bubble was no different on this count.

The famed investor Warren Buffett had decided to stay away from investing in technology stocks since he felt he did not understand them. This had ended up reflecting in the performance of his company Berkshire Hathaway. In the five-year period between 1995 and 1999, the Berkshire Hathaway stock had given a return of 167 per cent. During the same period, the NASDAQ Composite had beaten it by a wide margin and given a return of 441 per cent. Such was the strength of the bull run that it had even made a great investor like Warren Buffett look stupid for nearly half a decade. But he would ultimately have the last laugh.

10

But a Pin Lies in Wait for Every Bubble

The dot-com bubble did have a few hiccups along the way. One such hiccup was when Russia defaulted on its debt on 17 August 1998. The price of oil had fallen to $11 per barrel, the lowest in nearly a quarter century.[1] Russia, a big producer of oil, could no longer continue to pay interest as well as repay the foreign debt it had raised in dollars.

In fact, Russia even went a step ahead and put a moratorium on its $13.5 billion domestic debt, the money which the Russian government owed to its citizens. This was unheard of. All Latin American governments which had defaulted on their foreign loans in the past had always repaid their domestic debt.[2]

Before the default, the interest on the Russian debt was at 50 per cent in dollar terms.[3] Such a high rate of interest is paid only when the chances of default are very high. But even then, investors were ready to buy this risky debt. Why?

This confidence came from the fact that the IMF always came to the rescue of a defaulting nation. It had come to the rescue of Mexico in 1982 and 1994, the Asian 5 countries in 1997, and several other countries in between. Even if a country defaulted on its debt, there was no real reason to worry. The IMF would come up with some sort of rescue package for the country and the money given as a part of the rescue package would be used by the country to pay off the foreign investors it owed money to.

Investors knew that come what may, the IMF would come to their rescue. This happened primarily because American banks were always a part of such indiscriminate lending and the IMF was essentially an institution dominated and run by the Americans.

The IMF did come to the rescue with a package of $23 billion for Russia as expected. But any IMF rescue came with its own terms and conditions, which would lead to economic austerity. This was something Russia was not ready to follow. The IMF decided that there was no point in lending money to Russia and Russia defaulted, leading to the bursting of what had been termed as the moral hazard bubble created by the IMF. As Franklin R. Edwards writes in a research paper titled 'Hedge Funds and the Collapse of Long Term Capital Management':

> To understand the potential force of this moral hazard argument, consider the troubling possibility that the reason why the Russian default led to a worldwide flight from all emerging markets and risky bonds is that the default may have punctured a moral hazard bubble. Prior to Russia's default, international creditors and investors had observed IMF and U.S. assistance to Mexico, [South] Korea, Indonesia, and other troubled countries. They may well have believed that major Western countries and the IMF would not permit a default by a major country like Russia to occur.[4]

Russia's default also led to investors trying to exit the stock and bond markets of other emerging market countries all at once. Other than exiting emerging markets, investors also started to exit the stock markets in developed countries. The technology-heavy NASDAQ Composite Index started to fall from 19 August 1998, immediately after the Russian default. And by 8 October 1998, it was down by almost 22 per cent to 1,419.12. During the same period, the Dow, which comprised sturdier stocks than the NASDAQ Composite Index, fell by 11 per cent.

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While a global sell-off did hurt the investors, it caused more pain to some investors than to others. One such investor was Long Term Capital Management (LTCM), a hedge fund which operated from Greenwich in the American state of Connecticut. On 21 August 1998, a few days after Russia had defaulted on its debt, the hedge fund lost $553 million, or nearly 15 per cent of its investment capital in a single day. The mathematical investment models used by LTCM to make investments had predicted that it could not make a loss of more than $35 million in a single day.[5] But the models turned out to be flawed.

Legally the term 'hedge fund' does not exist, unlike say, a 'mutual fund'. The term was first used by the *Fortune* magazine in a 1966 article

to describe an investment fund managed by Alfred Jones, a Columbia University sociologist, diplomat and steamboat purser who had turned into a fund manager.[6]

In 1952, Jones wanted to launch an investment fund which would not only buy stocks on which he was bullish on, but also short-sell stocks (i.e., borrow and sell) which he felt were overpriced and would fall in price in the days to come. At the same time, he thought that with the expertise he brought to the table, the investors in the fund should be willing to pay him a slice of the profits he made for them.

The prevailing laws in the US would not have allowed him to launch a normal investment fund, so he had to launch a private partnership. Such partnerships had been common since the 1920s. Benjamin Graham, known as the father of the school of value investing and guru of Warren Buffett, probably ran the first such partnership on Wall Street.[7]

Unlike Graham who bought what he thought were 'value stocks' (i.e., stocks which were underpriced and would go up in price in the days to come), Jones wanted to buy as well as short-sell stocks. The money that he generated from short-selling stocks would partially fund the buying of stocks which he felt were undervalued. This way, he ensured that the exposure was 'market neutral', or, in simpler language, he 'hedged his bets'. The term hedge fund was derived from the colloquialism 'to hedge one's bets'. [8]

Let us try and understand this in a little more detail. Say a hedge fund raises $1 million from investors and short-sells shares worth $0.5 million which it thinks are overvalued by borrowing them. It uses the $1.5 million raised to buy shares which it feels are undervalued.

In the ideal scenario, the price of the shares which the hedge fund thinks are undervalued should go up and the price of the shares which the hedge fund thinks are overvalued should fall. Let us say that this is precisely what happens. The total market value of the shares it has bought goes up from $1.5 million to $2 million. These shares are then sold.

The market value of the shares which the hedge fund had short-sold falls from $0.5 million to $0.3 million. Since these shares are borrowed, they need to be bought back and returned. From the $2 million that the fund has got by selling the shares it owned, $0.3 million is used to buy back the shares which were short-sold.

This leaves $1.7 million in the hands of the hedge fund. Of this, $1 million is the investment. A profit of $0.7 million, or a return of 70 per cent, has been made on an investment of $1 million. A profit of $0.5

million has been made from the selling of undervalued shares once they had gone up in value. And $0.2 million has been obtained from the short-selling of overvalued shares. These shares had originally been sold for $0.5 million. They were bought back for $0.3 million, leaving a profit of $0.2 million ($0.5–$0.3 million) on the table.

But this was the best-case scenario. Consider another scenario in which the price of the undervalued stocks goes up, but at the same time, the price of the overvalued stocks which the hedge fund had thought would fall also goes up. So the value of the $1.5 million worth of stocks that has been bought increases in value to $2 million. These shares are sold and $2 million is received for the sale. The shares that the hedge fund had short-sold need to be bought back. The price of these shares has gone up from $0.5 million to $0.8 million. Since these shares were borrowed, they need to be bought back and returned. The hedge fund now uses $0.8 million of the $2 million it had obtained by selling shares to buy back the shares it had short-sold. This leaves the hedge fund with $1.2 million ($2 million–$0.8 million), or with a profit of 20 per cent on the investment of $1 million.

This is one kind of market-neutral or hedged strategy, where one part of the investment is loss-making but another part generates enough money so that the overall investment turns out to be profitable.

In the third situation, the value of the undervalued shares falls from an initial value of $1.5 million to $1.3 million instead of rising. These shares are sold and $1.3 million is received from the sale. At the same time, the price of the stocks that had been short-sold falls from $0.5 million to $0.25 million. These shares need to be bought back as they were borrowed and need to be returned. An amount of $0.25 million is taken from the $1.3 million generated by selling shares to buy back the borrowed shares. This leaves $1.05 million ($1.30 million–$0.25 million) with the hedge fund, leading to a profit of 5 per cent on the original investment of $1 million. This is another market-neutral strategy, in which losses from one trade are compensated for from gains from another.

The fourth situation is that which no hedge fund wants in which the price of the undervalued stocks that is supposed to go up, falls instead, and the price of the overvalued stocks, which is supposed to fall, goes up. So the value of the supposedly undervalued stocks falls from $1.5 million to $1.2 million. These stocks are sold and $1.2 million is received against the sale. At the same time, the value of the supposedly overvalued stocks goes up from $0.5 million, the price at which they had been short-sold, to $0.8 million. Of the $1.2 million generated by selling

the undervalued stocks, $0.8 million is taken to buy back the stocks that had been short-sold. This leaves the hedge fund with just $0.4 million ($1.2 million–$0.8 million). The hedge fund has lost $0.6 million ($1 million–$0.4 million), or 60 per cent of the investors' money of $1 million that it started with.

As we can see in this extremely simplified example, the hedge fund makes outright money in one situation. In two situations, it is hedged. And in the fourth situation, it loses money. The risk is not entirely eliminated. In the strictest sense of the term, no hedge fund is really totally hedged.

The strategy of Alfred Jones of buying some stocks and selling some others came to be known as the equity long-short strategy. He outperformed mutual funds which could only go long, that is, buy stocks. They could not sell them short because it was deemed to be a risky strategy. Jones also used leverage, that is, borrowed money, to spruce up his returns. Jones received 20 per cent of the returns he generated for the fund as compensation.[9]

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The success of Alfred Jones was copied by many others. And by the early 1990s, around a thousand hedge funds were operating in the market.[10] Jones, other than taking on 20 per cent of the returns generated by his fund, did not ask for anything else. The expenses that he ran up while running the fund were met out of his 20 per cent cut. Hedge funds that were launched in later years introduced a charge of 2 per cent of the total amount of the investment they were handling as a management fee.

Hedge funds with different investment strategies emerged over the years, but the basic idea of buying an undervalued asset and selling an overvalued one remained the same. In later years, leverage played a large part in sprucing up the returns of hedge funds. Jones's initial bets were largely made on stocks. Over the years, hedge funds started to bet on different assets, like bonds, currencies and even commodities.

Investing in hedge funds was limited to investors who could invest a substantial amount of money at one go. Hedge funds also came outside the regulatory purview. The logic being that since rich investors were investing, they had a good idea of what to do with their money.

LTCM was launched in February 1994 and the fund managed to raise $1.25 billion from investors. The goal when it started had been to raise $2.5 billion. Despite collecting half of what it had originally

envisaged, LTCM was the largest start-up fund till that time.[11]

It required a minimum investment of $10 million, which was much more than what other hedge funds required at that point of time. The fund charged a fund management charge of 2 per cent of the total assets and would keep 25 per cent of profits.

Withdrawals were not allowed for three years, unlike other funds, which allowed investors to withdraw money after three months. The fund wanted to buy undervalued financial securities and sell overvalued financial securities. These securities could be bonds issued by governments around the world, mortgage-backed securities issued by banks and financial institutions, stocks, commodity futures, options, etc.

LTCM had plans of investing in financial securities that their mathematical models showed to be undervalued. A financial security which is undervalued is typically illiquid, i.e., it is neither easy to buy the security nor to sell it. It is difficult to sell it in bulk at any point of time without driving prices down. With this in mind, the fund had plans of investing in a lot of undervalued securities.

This came with a lock in. Since the money was locked in for three years, the fund would be free from any pressure to sell its investments in order to repay investors who were withdrawing their money. This did away with any possibility of having to sell its investments in a hurry, subsequently driving down their price and losing money.

The company had a star-studded team of investment managers. At the top was the CEO John Meriwether, who had been the head of bond trading at Salomon Brothers, then a top investment bank on Wall Street in which Warren Buffett had a stake. Meriwether had moved along with his team of star traders at Salomon. The team also had on board David Mullins, a former vice chairman of the Federal Reserve. The economists Robert Merton and Myron Scholes, two of three creators of the famous Black–Scholes formula for options pricing, were also on the team.[12] They would get a Nobel Prize in economics three years later in 1997.

This was the main reason why the hedge fund managed to attract the kind of money that it did. Of the $1.25 billion raised, nearly $100 million came from the people who ran LTCM. One of the first investments of the fund was in bonds issued by the US government to finance the budget deficit. These bonds are typically referred to as US treasuries.

The US treasuries at that point of time were considered to be the safest investment in the world (and they still are). A hedge fund could not be making much money by investing in the safest investment in the world. Ultimately, return is also a function of the amount of risk that is

taken on.

Around $170 billion worth of thirty-year US treasuries traded every day at that point. The then latest lot of thirty-year US treasuries were most in demand, whereas the thirty-year US treasuries issued, say, six months earlier did not have that much demand. The greater demand for the thirty-year US treasury meant that it sold at a price which was greater than its face value, which meant it was overvalued, because at the time of maturity, the government would repay only the face value of the US treasury bond.

The higher price also meant that the overall return on the bond came down because the amount of interest paid by the government remained the same. Let us understand this through an example. Say a bond with face value $100, paying an interest of 7.3 per cent, was issued by the government. Given that it was the latest issue, there was great demand for it and this ensured that the price of the bond soon rose to $100.5. An investor who bought it at $100.5 continued to get paid an interest of 7.3 per cent by the government on a face value of $100. But since he had bought it at a slightly higher price of $100.5, his overall return was a little lower than the interest of 7.3 per cent that he was paid on it.

On the flip side, let us consider a thirty-year bond which was issued six months earlier. The bond had the same features. It had a face value of $100 and it paid an interest of 7.3 per cent per year. Since the demand for the bond was not that great, it sold at a price of $99.5, which was lesser than its face value of $100. Any investor who bought this bond would continue to get the same interest of 7.3 per cent. But since he had bought it at a slightly lower price of $99.5, his overall rate of return was a little higher than the 7.3 per cent interest he was being paid.

Both the bonds were basically the same. They repaid the $100 at maturity and at the same time continued to pay the promised interest of 7.3 per cent, or $7.3 every year. If the investor was willing to bet that the American government would repay $100 at the end of 30 years, he might as well have bet that the government would repay the same amount 29.5 years later as well. The risk of investing in either of these bonds was the same.

The difference in price of both these bonds was an aberration and would soon go away. LTCM shorted the bond (i.e., borrowed and sold) maturing in thirty years and it bought the bond maturing in 29.5 years. The bet was that in some time, the discrepancy in the prices would go away and both the prices would equate to $100. Technically, this situation is referred to as the 'narrowing of the spreads'. When the spreads narrowed, LTCM would gain both ways, as was the case in the

earlier example of the hedge fund. It would gain $0.5 when the price of the undervalued 29.5-year bond would move to $100 from $99.5 and it would gain $0.5 when the price of the thirty-year bond would fall from $100.5 to $100. This transaction would have given LTCM a minuscule return. To spruce up returns, LTCM used leverage. As we have seen earlier, borrowing money and investing, if and when it goes right, can generate huge returns.

LTCM planned to spot a lot of these small profitable opportunities through complicated mathematical formulae, hoping to latch on to them and spruce up its returns by using leverage. Scholes explained LTCM's strategy to his mentor and Nobel Prize winner Merton Miller: 'Think of us (LTCM) as a gigantic vacuum cleaner sucking up nickels from all over the world.' [13]

The gigantic vacuum cleaner got off to a good start. In 1994, the fund generated a return of 28 per cent (around 19.9 per cent after the cut-off of the partners and the management expenses). This was in a year during which an average investor in bonds had lost money.[14]

The stupendous performance continued over the next two years and the fund returned 42.8 per cent in 1995 and 40.8 per cent in 1996, after fees. But in 1997, returns fell to 17.1 per cent.[15] The NASDAQ Composite generated a return of around 21.6 per cent during the same period. The fall in returns was largely due to the copycat problem. As other banks and financial institutions started copying the same investment strategies as LTCM, its profit opportunities came down.

This led to a situation where LTCM decided to take on more leverage to spruce up its returns. In fact, till then, the fund had used a modest leverage of only eight times instead of the twenty-five times that was permitted.

Due to the returns earned and newer money coming into the fund, the size of the fund had grown to around $7.5 billion. But with investment opportunities coming down, the fund decided to return nearly $2.7 billion to its investors. The investors did not like the idea of their money being returned. The performance of the fund had been fabulous, and they wanted to stay invested. But the money was returned and this brought down the size of the fund to $4.8 billion at the start of 1998.[16] On this, LTCM had borrowed twenty-five times. As Franklin R. Edwards writes:

> With its roughly $5 billion in equity at the start of 1998, LTCM reportedly borrowed more than $125 billion from banks and securities firms. This more than 20-to-1 leverage ratio, high by

any standard, was unusual even for hedge funds. A third of hedge funds reportedly do not borrow at all, and, of those that do borrow, 54 per cent borrow no more than the amount of equity their investors put in the fund. Of those that borrow more, it is rare that leverage exceeds ten to one.[17]

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On 17 August 1998, the Russian government defaulted on its dollar as well as rouble debts. This is something that the mathematical models of LTCM had not taken into account. LTCM had investments in Russia, where it had bought bonds which its models said were underpriced and short-sold bonds which its models said were overpriced. With the Russian government deciding to default, the price of the bonds which LTCM had bought fell much more than the bonds it had sold short, leading to huge losses. After Russia's default, stock, bond and commodity markets started to fall all over the world, leading to more losses for LTCM. LTCM was not the only fund in trouble. Even Julian Robertson's Tiger Fund, which was one of the biggest hedge funds in the world, lost $1 billion in a single day in September 1998. As Robertson put it, 'Many of us were waiting for something that would intervene. It was a big shock when it hit.'[18]

LTCM borrowed money from banks and other financial institutions. The assets it bought by using the money borrowed were offered as collateral to the institution it had borrowed money from. As these assets lost value, these institutions either asked for more collateral or pulled out the loan.

LTCM had to sell some of its investments to pay back the money it had borrowed. Since LTCM invested in a lot of illiquid financial securities when it wanted to sell them in a hurry, there were no buyers. This pushed down the price of these securities further, adding to the fund's losses. There had been a lot of copycat trades, where other banks and institutions had invested in the same financial securities that LTCM had. As these investments started to lose value, the other banks and investors also started to exit these investments. The selling pressure ensured that the prices of the financial securities that were being sold fell further, adding to the losses of LTCM.

The investment bank Goldman Sachs had also copied the trades of LTCM. It ended up with huge losses. It explained the losses by saying 'our risk model did not take into account enough, the copycat problem'.[19]

LTCM had large positions on the investments it had made. When it tried to sell even a small part of its investments, it pushed the prices of these financial assets down further. As prices of the financial securities that LTCM had invested in fell, the mathematically oriented traders of LTCM were amazed to see that no one was ready to buy the financial assets which their mathematical formulae were showing to be very 'cheaply priced'.[20]

Models had not taken into account the scenario in which there were no buyers in the market when LTCM wanted to sell quickly. Not surprisingly, the losses kept mounting as almost every financial market in the world continued to fall and LTCM's trades continued to lose money. They could not exit them because the trades were much too big. On 10 September 1998, the firm lost $145 million. On the next day, a Friday, the losses were at $120 million. The carnage continued after the weekend. In the period between 14 and 16 September 1998, the firm lost a further $264 million. On 17 September 1998, it made a profit of $6 million. On 19 September 1998, a Saturday, David Mullins, who had formerly been the vice chairman of the Federal Reserve, called William McDonough, the president of the Federal Reserve Bank of New York.[21]

A theory going around was that even financial institutions which were in good shape and could buy the assets that LTCM was trying to sell were not doing so in the hope of pushing prices down even further and then forcing LTCM to sell its investments at distressed prices. The situation that LTCM was in had become very similar to what Louis Bacon, the principal of Moore Capital, had once said: 'There are those who know that they are in the game; there are those who don't know they are in the game; and there are those who don't know they are in the game and have become the game.'[22]

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It was the job of the Federal Reserve Bank of New York to maintain order on Wall Street. McDonough, the governor, was worried that if LTCM started dumping its investments, the prices in various markets would collapse.

It was important for the Federal Reserve to ensure that some sort of a solution was found to the entire issue. Goldman Sachs and Warren Buffett tried to buy out the partners of LTCM for $4 billion. But that deal did not work out because Buffett wanted an answer in less than an hour's time and the fund could not sell out without consulting its investors.[23]

On 23 September 1998, the Federal Reserve Bank of New York engineered a deal in which fourteen Wall Street banks came together to buy a 90 per cent stake in LTCM for $3.6 billion. As Satyajit Das writes in *Traders, Guns and Money,* 'Keynes noted that in the long run we are all dead – LTCM showed that the proposition also held in the short run.'[24]

The high-flying partners of the firm who had earlier earned bonuses running into millions of dollars were now employees, taking home a salary of around $250,000 per year, equivalent to what a bond trader who was just starting out on Wall Street was getting paid back then.[25]

Even though no taxpayer money was spent, the rescue of LTCM brought the issue of moral hazard back in the reckoning. The moral hazard bubble which had burst after the default of debt by Russia was being blown up again. Alan Greenspan was uncharacteristically direct about the Federal Reserve arranging the rescue of LTCM. As he said, 'To be sure, some moral hazard, however slight, may have been created by the Federal Reserve's involvement.'[26]

This was clearly not a good sign. As Franklin R. Edwards writes:

> While the importance of this 'moral-hazard bubble' view is admittedly hard to establish, recent events should at minimum dramatize the danger that an IMF or US policy of consistently bailing creditors and investors out of collapsing economies threatens to make markets more fragile in the long-run.[27]

The Greenspan-led FOMC cut interest rates thrice in quick succession between 29 September and 17 November 1998. On 29 September 1998, the FOMC cut the federal funds rate by 25 basis points to 5.25 per cent. This was further reduced to 5 per cent on 15 October 1998 and then to 4.75 per cent on 17 November 1998.

The stock market, which was having a tough time, was soon back to rallying. The NASDAQ Composite closed the year at 2,192.69, up 39.6 per cent. The Dow was up 16.1 per cent during the course of the year.

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As the stock market bubble became bigger, Alan Greenspan talked about there being a bubble in the stock market a few times. The first time, as we saw, was in December 1996. A couple of years later, he was at it again. On 4 September 1998, in a speech titled 'Question: Is There a New Economy?' Greenspan said:

> On occasion, this very difficulty leads to less-disciplined evaluations, which foster price volatility and, in some cases, what we term market *bubbles* [emphasis added] – that is, asset values inflated more on the expectation that others will pay higher prices than on a knowledgeable judgment of true value.[28]

But a little later, in the same speech, Greenspan is seen justifying the rise of the stock market in the US since 1995. Here is what he said:

> Coupled with the quickened pace of productivity growth, wage and benefit moderation has kept growth in unit labour costs subdued in the current expansion. This has both damped inflation and allowed profit margins to reach high levels.
>
> That, in turn, apparently was the driving force beginning in early 1995 in security analysts' significant upward revision of their company-by-company long-term earnings projections. These upward revisions, coupled with falling interest rates … impelled investors to produce one of history's most notable bull stock markets.[29]

In the same speech, Greenspan was seen hinting at a bubble and then justifying the higher prices. There were other occasions when Greenspan had made his liking for the American economy clear to everybody. In May 1998, Greenspan told President Clinton that this was the best economy he had seen in fifty years. Two months later, he reiterated the same in a testimony to the US Congress. In September, after troubles at LTCM erupted, Greenspan said that it was 'the biggest financial challenge facing the world in half a century'.

As Ravi Batra asks in *Greenspan's Fraud*, 'How can an economy be the best and then face its biggest crisis in 50 years?'[30]

The NASDAQ Composite, the index which comprised largely of technology and dot-com stocks, peaked at 5,048.62 on 10 March 2000. It had risen by a whopping 130 per cent since the beginning of 1999. In fact, Greenspan had started raising the federal funds rate from mid-1999 and by May 2000 had raised it by 150 basis points. But even this increase in interest rates did not have much impact on the bull run and it continued unabated.

Central banks raise interest rates when markets get too bubbly, with the hope of making fixed income instruments, like bonds, bank deposits and commercial paper, attractive enough for investors to get out of the stock market and look at investing in these products with a guaranteed

return.

By the end of 1999, the stock market was giving very high returns. In November 1999, the NASDAQ Composite Index gave a return of 12.4 per cent. In December 1999, it went up by 22 per cent. In February 2000, it returned 16 per cent. When the market was giving more than 10 per cent returns per month, why would investors want to invest in fixed income investments that paid less than 10 per cent a year?

By the end of 1999, even though the stock market had reached astonishingly high levels, the Wall Street analysts were still recommending that investors should continue to buy stocks. According to data from Zack Investment Research, only about 1 per cent of the recommendations on some 6,000 companies were sell recommendations. The remaining 99 per cent was divided between 69.5 per cent buy recommendations and 29.9 per cent hold recommendations (i.e., do not buy more shares but do not sell what you already own).[31]

As prices continued to go up, no analyst wanted to take the risk of issuing a sell recommendation. As Andy Kessler, quotes Henry Blodget in *Wall Street Meat*:

> You've got to understand. If I stop recommending stock and the shares keep going up, there is hell to pay. Brokers call you up and yell at you for missing more of the upside. Bankers yell at you for messing up their relationships. There is just too much risk in not recommending these stocks.[32]

Wall Street had an interest in letting the boom run. People would continue to trade more, leading to Wall Street firms generating more commissions. At the same time, as long as the stock market continued to trade at high levels and did not fall, investment banking business would keep coming in, as more and more new companies would want to get listed, and this would mean more fee income for the Wall Street firms.

New-era economic thinking that had prevailed during the 1920s, when the American stock market had rallied big time, had made a comeback, like it usually does every time the prices of stocks rise at a rate which defies conventional logic.

In the 1920s, it was the radio stocks that had led the new-era economic thinking. This time around, it was the Internet. As Robert J. Shiller writes in the second edition of *Irrational Exuberance*:

> Using the Internet gives people a sense of mastery of the world. They can electronically roam the world and accomplish tasks

> that would have been impossible before. They can even put up a website and become a factor in the world economy themselves in previously unimaginable ways … Because of the vivid and immediate personal impression the Internet makes, people find it plausible to assume that it also has great economic importance.[33]

The feeling was that the Internet would change the world and help companies make lots of money like never before. This justified the high price that investors were ready to pay for companies which did not make any profits at all. The entrepreneurs who started these companies also firmly believed in the 'new era' nonsense. In February 2000, a month before the NASDAQ peaked, Naveen Jain, the CEO of a company called Infospace, very confidently said, 'I predict that Infospace will be the first company ever to have a one-trillion-dollar market capitalization.'[34] This might seem very stupid in retrospect, but then, those were the days!

The media helped build on the myth of a new era by running articles with headlines like 'The Triumph of the New Economy' and 'The End of The Business Cycle'. The optimism was also matched by all kinds of books that came out exalting the virtues of long-term investing in the stock market. Suze Orman, who happened to be a highly successful investment adviser, wrote books like *The 9 Steps to Financial Freedom* in 1997 and *The Courage to Be Rich: Creating a Life of Material and Spiritual Abundance* in 1999. The advice that she gave was that investors should move their money from debt into stocks totally. While running her calculations, she assumed that the stock market would surely produce a return of 10 per cent per year.[35]

But the book that took the cake was *Dow 36,000: The New Strategy for Profiting from the Coming Rise of the Stock Market*, written by James Glassman and Kevin Hassett. They wrote that the Dow would reach a level of 36,000 by 2005. This was when the Dow was quoting at a level of around 10,000. The authors had their logic. They felt that the bull market had led to investors realizing the importance of diversified portfolios and holding on to stocks for the long term. This had led to an increased demand for stocks, ensuring that the stock market would continue to remain at a perpetually high level.[36] This was very similar to what the economist Irving Fisher had said just before the stock market bubble of the late 1920s collapsed in October 1929. Such was the bullishness of authors that they wrote that 'a sensible target for Dow 36,000 is early 2005, but it could be reached much earlier'.[37]

For the author David Elias, the Dow at 36,000 was not enough. His

book was titled *Dow 40,000 – Strategies for Profiting from the Greatest Bull Market in History*. But unlike Glassman and Hassett, Elias was in a lesser hurry. He said that the Dow would reach 40,000 by the year 2016.

With all this optimism floating around, almost anybody and everybody could launch an IPO, irrespective of whether they had a business model in place or not.

In fact, towards the end of the boom, there was even a website called 'AllAdvantage.com' which paid people to surf. Yes, you read it right. The website actually paid people to surf. The way it worked was that when surfers signed into the website, they downloaded an advertising bar. The surfers got paid 53 cents an hour for every hour they browsed with the advertising bar on their screens.[38]

AllAdvantage.com was not the only dot-com throwing money around. On 30 January 2000, seventeen dot-coms blew up $3.5 million each in ninety seconds, by advertising during the Super Bowl, the yearly championship game of the National Football League (NFL), the highest level of professional American football. This included Computer.com, a site whose business model rested on hand-holding new computer users. The dot-com had got a seed financing of $5.8 million. And it blew up nearly 60 per cent of that money at one go.[39]

Many dot-coms advertised during the Super Bowl in 2000 because the three dot-coms that had advertised during the Super Bowl in 1999 had received great media attention. Some of the other dot-coms that advertised during the Super Bowl in 2000 were AutoTrader.com, Britannica.com, Monster.com, OnMoney.com, Oxygen.com, and Pets.com. But with so many dot-coms advertising during a single event at the same time, the impact on the target consumer was rather muted. A survey of 1,000 people found that 357 of them had watched the Super Bowl game. Of this number, only 17 per cent could recall the name of any one single dot-com which had advertised, without any prompting from people carrying out the survey.[40]

Despite running huge losses, the dot-coms were comfortable throwing about money like this primarily because they were confident of being able to raise more money from investors. This could be easily done at a time when the stock prices of these companies continued to rise.

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The stock market had become what the economist Robert J. Shiller in the first edition of his book *Irrational Exuberance* had called a naturally

occurring Ponzi scheme. The stock market was going up because it was going up. As Shiller wrote:

> Ponzi schemes do arise from time to time without the contrivance of a fraudulent manager. Even if there is no manipulator fabricating false stories and deliberately deceiving investors in the aggregate stock market, tales about the market are everywhere. When prices go up a number of times, investors are rewarded sequentially by price movements in these markets just as they are in Ponzi schemes. There are still many people (indeed, the stock brokerage and mutual fund industries as a whole) who benefit from telling stories that suggest that the markets will go up further. There is no reason for these stories to be fraudulent; they need to only emphasize the positive news and give less emphasis to the negative.[41]

But good things do not last forever. The NASDAQ Composite crossed the 5,000 mark for the first time on 9 March 2000, closing the day at 5,046.86. The next day it stayed at that level and closed the day at 5,048.62. Appearing on CNN on 10 March 2000, Jeremy Siegel, an economist and the best-selling author of *Stocks for the Long Run*: *The Definitive Guide to Financial Market Returns and Long-Term Investment Strategies* said, 'A big decline is very possible.' Siegel had always argued that buying stocks was a good investment strategy at any point of time, irrespective of the price the stocks were quoting at.[42]

The NASDAQ Composite started to fall and by 17 March 2000, it was at 4,798.13, or around 5 per cent down from the peak. The stock market opened after the weekend on 20 March 2000. On that day, the well-respected *Barron's* magazine came out with an article titled, 'Burning Up', written by Jack Willoughby. This was not typical magazine fluff, but an article that had excellent research and analysis built into it. It conclusively showed that nearly 25 per cent of the dot-com companies, which had been the darlings of the bull run, would run out of cash over the next twelve months. Worse, unlike in the past, they would not be able to raise any more money in the days to come.

As Michael Lewis says about the Barron's article in *Panic – The Story of Modern Financial Insanity*: 'It was the equivalent on Wall Street of the release in Washington of an escort services list: all sorts of important people scoured it to make sure their name wasn't on it, because everyone on it was assumed to be finished.'[43] This magazine story essentially punctured the Internet bubble. The Dow had peaked on 14 January

2000 at 11,722.98 and had been falling since then. By 10 March 2000, the day the NASDAQ Composite had peaked, the Dow had already fallen by 15 per cent to 9,928.82. So, in a way, investors had started to realize that the bubble had gone on for too long and that the stock prices were much higher than what they should have been. What they needed was an excuse to sell out of technology stocks. The excuse came in the form of the *Barron's* article.

Barron's had conducted the study with the Internet stock evaluation firm Pegasus Research International and had projected that at least fifty-one out of the 207 companies that had been included in the study would run out of cash in the coming year. They would try and raise fresh funds by selling shares and bonds but would not find buyers, the article said. This meant that they would either be bought out by stronger rivals or have to shut down their business.[44]

The article further pointed out that the valuation of the 371 publicly traded Internet companies was at $1.3 trillion, which was 8 per cent of the total valuation of the US stock market. Financial problems at these firms could lead to the prices of Internet stocks falling. This, in turn, would have a negative wealth effect. People would feel less wealthy due to the falling prices and, in turn, buy less of everything else, like cars, clothing, homes and so on.[45]

The NASDAQ Composite fell by 3.9 per cent on 20 March 2000, coming down to 4,610. Over the course of the next few days, attempts were made to discredit the study. And it worked for a while. Between 21 and 24 March 2000, the NASDAQ Composite rose 7.7 per cent to close at 4,963.03. But gradually, the strength of the argument sunk in. By 13 April 2000, a little over a month after it had peaked, the NASDAQ Composite had fallen by 27 per cent to 3,676.78. The other triggers for the fall came in the form of a Goldman Sachs analyst downgrading the earnings expectations of Microsoft. Forrester Research also decided to go against the optimistic trend that had prevailed and announced that many of the online retailers would have to close down.[46] On 14 April 2000, the NASDAQ Composite fell by 9.6 per cent. At the end of the trading day on 14 April, Lawrence Summers, the treasury secretary, appeared on CNN and appealed for calm. He said:

> We are watching the developments in the markets, as we always do, but our focus continues to be on what is most important – the fundamentals of the American economy and their contribution to our economic expansion. And I'm confident that the economy will continue to grow over the next while, with

> fluctuations from quarter to quarter as always, but our fundamentals are sound.[47]

James Cramer, one of the loudest votaries of the dot-com boom and a part-time hedge fund manager who also ran the website TheStreet.com put it best when he was asked whether the era of businesses raising millions of dollars just on the basis of an idea had come to an end: 'Yeah, it's over. The Gold Rush is over.'[48]

By the end of the year, the NASDAQ had fallen by 51 per cent from a peak of 5048.62 on 10 March 2000 to 2,470.52. As John Kenneth Galbraith puts it in *A Short History of Financial Euphoria*:

> Individuals and institutions are captured by the wondrous satisfaction from accruing wealth. The associated illusion of insight is protected, in turn, by the oft-noted public impression that intelligence, one's own and that of others, marches in close step with the possession of money. Out of that belief, thus instilled, then comes action – the bidding up of values … The upward movement confirms the commitment to personal and group wisdom. And so on to the moment of mass disillusion and the crash. This last … never comes gently. It is always accompanied by a desperate and largely unsuccessful effort to get out.[49]

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There were lots of reasons behind the stock market bubble, from greed to low interest rates to easy money to all the new-era economic nonsense that was bandied around. A myth that got established early enough in the bubble was that the Internet traffic was doubling every three months. This led to the belief that the usage of the web was all set to explode. But there were no real numbers or data backing this up, and over a period of time, it simply became a belief that nobody seemed to challenge. The actual Internet traffic was growing at the slower rate of 70–150 per cent per year.[50] This meant that all those huge numbers being bandied around about the number of eyeballs and the potential reach of the Internet were not really true.

In fact, companies which built the infrastructure to provide the Internet bandwidth also fell for this hype and worked with the assumption that they were the only players present in the market and laid down optic fibre lines which could accommodate 100 per cent of the projected demand. Companies like Qwest, MCI, and Global

Crossing were all building infrastructure that could cater to 100 per cent of total demand.[51]

There was a sudden and huge supply of Internet bandwidth in the market for which there was simply no demand, as a result of which prices crashed. This proved to be good for Internet users, but was a disaster for companies which sold Internet connections and laid the infrastructure for it. As Roger Lowenstein writes in the *Origins of the Crash – The Greatest Bubble and Its Undoing*:

> The propagation of this myth is, in some sense, the story of any bubble. There is always a germ of truth, a half-fact or momentary fact, that taken to hyperbole, can justify the most fantastic projections. In 1844, to gauge demand for the Manchester & Southington Railroad, a traffic taker counted the number of sheep on a fair day, doubled it to account for projected development and thus arrived at an estimate of daily average freight. Counting sheep on the internet was not altogether different.[52]

More than anything, it was the Greenspan put, or the feeling that, come what may, Alan Greenspan will come to the rescue of the stock market that kept blowing up the dot-com bubble.

When he did start to raise interest rates in mid-1999, it was a case of too little too late. In the FOMC meeting on 29 and 30 June 1999, it was decided to raise the federal funds rate by 25 basis points to 5 per cent. The remaining part of the year saw two more rate hikes of 25 basis points each. The second hike in rates happened on 16 November when the federal funds rate was hiked by 25 basis points to 5.5 per cent. In the first meeting of 2000, it was decided to hike the rate by a further 25 basis points to 5.75 per cent. Between June 1999 and February 2000, the Federal Reserve had raised the federal funds rate by 100 basis points. During the same period, the NASDAQ Composite had risen 56.5 per cent. Now what would a rise in interest rates by 100 basis points do to such a market? Nothing! In fact, a day after the Federal Reserve raised interest rates by 25 basis points in its early February 2000 meeting, the NASDAQ Composite rallied by 3.4 per cent. This was a clear signal that these 25 basis point hikes were not going to impact the market in any way. On 21 March 2000, when the FOMC met again, it decided to raise interest rates again by 25 basis points to 6 per cent. On 16 May, there was a further increase to 6.25 per cent.

Clearly, FOMC led by Alan Greenspan did not do enough on the

interest rate front to rein in the stock market bubble. Greenspan even developed a rationalization for letting the bubble run. He said that there was no way for the Federal Reserve to figure out if there was a bubble. He told the US Congress in June 1999: 'Bubbles are generally perceptible only after the fact. To spot a bubble in advance requires a judgment that hundreds of thousands of informed investors have it all wrong. Betting against markets is usually precarious at best.' [53]

So the Federal Reserve could not spot a bubble. But once it had burst, steps could be taken to ease its fallout, Greenspan felt. As he said in a speech titled 'Economic Volatility' on 30 August 2002:

> The notion that a well-timed incremental tightening could have been calibrated to prevent the late 1990s bubble is almost surely an illusion. Instead, we noted in the previously cited mid-1999 congressional testimony the need to focus on policies 'to mitigate the fallout when it occurs and, hopefully, ease the transition to the next expansion'.[54]

There is a fundamental problem with this argument. Greenspan was basically saying that the Federal Reserve could not recognize a bubble, but it could figure out when the same bubble had burst. As Raghuram Rajan writes in *Fault Lines* about Greenspan's speech:

> This speech seemed to be a post-facto rationalization of why Greenspan had not acted more forcefully on his prescient 1996 intuition: he was now saying the Fed should not intervene when it thought asset prices were too high but that it could recognize a bust when it happened and would pick up the pieces.[55]

If ever there was a convoluted argument, this was it. But as John Kenneth Galbraith puts it in *A Short History of Financial Euphoria,* 'Those who are involved never wish to attribute stupidity to themselves.'[56]

At any rate, Warren Buffett had the last laugh. In his annual letter for the year 2000 to the shareholders of Berkshire Hathaway, he wrote:

> By shamelessly merchandising birdless bushes, promoters have in recent years moved billions of dollars from the pockets of the public to their own purses (and to those of their friends and associates). The fact is that a bubble market has allowed the creation of bubble companies, entities designed more with an eye to making money off investors rather than for them. Too often,

an IPO, not profits, was the primary goal of a company's promoters. At bottom, the 'business model' for these companies has been the old-fashioned chain letter, for which many fee-hungry investment bankers acted as eager postmen.

But a pin lies in wait for every bubble. And when the two eventually meet, a new wave of investors learns some very old lessons: First, many in Wall Street – a community in which quality control is not prized – will sell investors anything they will buy. Second, speculation is most dangerous when it looks easiest.[57]

As a journalist remarked after the dot-com bubble had been pricked, with the benefit of hindsight: 'If it seems stupid, it's stupid.'[58] But America and the world were not done with stupidity yet. One more round awaited them.

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In the aftermath of 9/11, the FOMC led by Greenspan cut interest rates even further. The federal funds rate, which was at 3.5 per cent before the attack was cut four times and brought down to 1.75 per cent by the end of the year through four rate cuts, starting with a cut of 50 basis points on 17 September 2001, six days after the attack. People did borrow and spend as was the logic behind the interest rate cuts, but they went overboard with it. America's new bubble after the dot-coms was real estate and as writer Dave Barry wrote, it was built on the belief that 'anyone can make money in real estate'.[59] And low interest rates were not the only reason behind it.

In fact, as we shall see in the final volume in the *Easy Money* series, low interest rates acted as a final catalyst to a situation which was just right for a bubble.

11

Conclusion

If We Learned from Experience, History Wouldn't Repeat Itself

Walter Bagehot became the editor of *The Economist* in 1860. He was probably the most influential financial journalist of his era. Such was his influence that William Gladstone, who served as the British prime minister four times, referred to Bagehot as the permanent Chancellor of the Exchequer.

In January 1866, Watson, Overend and Co., a railway bond arranger, failed to repay liabilities amounting to £1.5 million. One financial firm which had survived successive waves of crises that had hit Lombard Street (where most financial firms in London were based) throughout the nineteenth century was Overend, Gurney and Co.

Watson, Overend and Co., and Overend, Gurney and Co. had one common word in their names. A connection was assumed between the two financial firms because of this and investors started to withdraw the money they had deposited with Overend, Gurney and Co., just as a precaution.[1]

Over the next two months, nearly £2.5 million was withdrawn from Overend, Gurney and Co., and panic spread throughout Lombard Street. On 9 May 1866, the firm made an appeal to the Bank of England for emergency support. The bank did not want to encourage moral hazard and refused to bail out Overend, Gurney and Co., almost immediately. After this, left with no option, the firm suspended payment at 3.30 p.m. on the same day.[2]

The financial crisis that followed was catastrophic. As the *Bankers' Magazine* wrote about the crisis: 'It is impossible to describe the terror

and anxiety which took possession of men's minds for the remainder of that and the whole of the succeeding day.'[3] In the panic that followed, everyone ran to withdraw their deposits and a crisis was soon under way.

Bagehot, as editor of *The Economist*, observed this crisis from close quarters. He also had the experience of having closely observed two other financial crises that had hit the city of London before the 1866 crisis. On the basis of these experiences, he wrote *Lombard Street* which was published in 1873. This book gradually became a guide to central banks around the world on how to handle a financial crisis. The central point that Bagehot made in this book was as follows: 'In wild periods of alarm, one failure makes many, and the best way to prevent the derivative failures is to arrest the primary failure which causes them.'[4]

The primary failure was to be prevented by the Bank of England by lending from its reserves freely during times of panic. As Bagehot put it:

> Whatever bank or banks keep the ultimate banking reserve of the country must lend that reserve most freely in time of apprehension … Whether rightly or wrongly, at present and in fact the Bank of England keeps our ultimate bank reserve, and therefore it must use it in this manner.[5]

Bagehot felt that a central bank's role as the lender of the last resort, in an environment where no one else is ready to lend, should be a statutory responsibility and not left to the discretion of those who run the bank.[6] He also wrote very clearly that no distinction should be made between those who are bankrupt and those who merely have a problem of not being able to borrow money because there is a panic on. As he put it, 'The way to cause alarm is to refuse someone who has good security to offer. The news of this will spread in an instant through all the money market at a moment of terror … and will intensify the terror everywhere.'[7]

He also kept in mind the issue of moral hazard and felt that the Bank of England should be lending money at a very high rate of interest. 'These loans should only be made at a very high rate of interest. This will operate as a heavy fine on unreasonable timidity, and will prevent the greatest number of applications by persons who do not require it.'[8] Any money being lent by the Bank of England should not be seen as easy money being lent and entice speculators to borrow and speculate. These principles laid out by Bagehot became the blueprint for the management of financial crises over the years. This happened especially after the

Great Depression, which started in the US in late 1929. During the Great Depression, the Federal Reserve did not come to the rescue of banks and many banks failed, which, in turn, prolonged the depression.

As things evolved, central banks, governments, and international institutions like the IMF started rescuing more and more banks and financial firms, instead of just helping them tide over a crisis, as Bagehot had originally suggested. Just like with John Maynard Keynes later, the ideas of Bagehot were also bastardized in some sense.

As we have seen, the government of the US rescued a huge number of savings and loan institutions, or S&Ls during the 1980s. The IMF rescued many big American banks which had gone on a lending spree to various governments in South America and other parts of the world. The Federal Reserve of New York arranged for the rescue of Long Term Capital Management, one of the biggest hedge funds at that point in time in 1998. Alan Greenspan cut interest rates at the slightest sign of trouble in the financial system during his nearly two-decade long tenure as the chairman of the Federal Reserve.

All this accentuated the moral hazard bubble. Investors and financial firms came to believe that, come what may, the central banks and governments would come to their rescue at the slightest sign of trouble. This encouraged them to take on more and more risks in the quest for higher returns. This finally led to huge real estate bubbles in the US and other parts of the world, starting in the early years of the twenty-first century. Once these bubbles started to burst, a host of financial firms on Wall Street and other parts of the world landed into trouble. And as they had hoped, central banks and governments came quickly to their rescue.

John Lanchester summarizes the situation in a long paragraph in *I.O.U. – Why Everyone Owes Everyone and No One Can Pay*:

> The really serious wave of bailouts and collapses began with Bear Stearns in March 2008 and then went to the next level with the 'conservatorship' of Fannie Mae and Freddie Mac on September 7, the largest nationalization in the history of the world. It was followed eight days later by the largest bankruptcy in history of the world, when investment bank Lehman Brothers went into Chapter 11, the American form of receivership. The next day saw the biggest bailout of a private company in history, with the US Government taking a 79.9 per cent share in the insurer AIG. Merrill Lynch … was taken over by the Bank of America on September 14, 2008. On September 18, came the news of the biggest merger … Lloyds was to buy HBOS, the

> largest mortgage lender in the United Kingdom, with 20 per cent of the market … On September 21, Goldman Sachs, the world's biggest investment bank, and Morgan Stanley converted their legal status from investment banks to holding banks, a change which allowed them access to help from the Federal Reserve in return for a greatly increased level of government supervision. On September 28, the Luxembourgian, Belgian, and Dutch governments nationalized the bank Fortis, the biggest private employer in Belgium, at a cost of £1.3 billion. On September 29, Bradford & Bingley were nationalized, at a cost of £41.3 billion … The German commercial loan giant Hypo Real Estate was bailed out on October 5 at a cost of £50 billion. The Icelandic banking system collapsed the next day. During the weekend of October 11–12, the British banking system teetered on the point of collapse … That same weekend, RBS was in receipt of an emergency injection of government cash, to the tune of £20 billion.[9]

Scores of financial institutions across the US and Europe were bailed out, nationalized, or simply merged to ensure that they continued to survive. If these financial institutions had not been rescued, the trouble would have spilled over to other financial institutions and from there to the general economy. This would have had a negative impact on the economic growth of the countries which they belonged to. It was necessary to rescue them. This was the explanation offered by central banks and governments which came to their rescue.

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This situation of central banks and governments rescuing financial firms is very similar to that of forest fires. Three researchers at the University of Cornell, Bruce Malamud, Gleb Morein and Donald Turcotte, decided to simulate a forest fire game on the computer. In the game, the computer program basically plants trees on random squares. As time goes by, more and more trees are planted at random and what gradually emerges looks like a forest. Now and then, after a certain number of trees have been planted, the programme dropped a match stick on a random square. The matches fall suddenly with no fixed frequency. Where a match falls determines what happens. If it falls on an open square with no trees, there is no impact. If it falls on a tree, the tree catches fire. If a tree catches fire, the fire spreads to the other trees that are in the vicinity.[10]

The researchers ran multiple simulations of the game and dropped matches at various frequencies. In some cases, they dropped matches after every 100 trees were planted. In other cases they dropped matches after 2,000 trees had been planted. As expected, when matches were dropped more frequently, there were many more fires, in comparison to simulations wherein matches were dropped less frequently. In cases where matches were dropped after 2,000 trees had been planted, the fire spread from the tree on which the match had landed, to the entire forest. This was because by then the entire grid was filled with trees and the fire was catastrophic. The researchers came to the conclusion that when the fire-starting frequency was low, there was a marked tendency for the fires to be catastrophic, all-consuming disasters.[11]

This observation was called the 'Yellowstone effect' by the researchers. The Yellowstone National Park, situated primarily in the American state of Wyoming has regular forest fires, and over the years some of them have been very big. Since 1890, the US Forest Service has followed a zero-fire-tolerance policy, wherein they have tried to put out each and every fire, even those that have started due to natural causes. This is the real-world equivalent of the game in which lesser matches are dropped. It appears to have similar consequences as well.[12]

When the policy is to put out all fires, it leads to a situation wherein the trees age. Old trees are not replaced by new trees. At the same time, dead wood, grass, twigs and dead leaves keep accumulating. All this makes for excellent fuel for any fire. Hence, there is combustible material everywhere and even a single strike of lightning or a cigarette butt can start off a big fire.[13]

Given this, it is very important to let small forest fires run so that all the combustible material that can lead to a big forest fire keeps getting burnt out. There is a striking example of the impact different fire control policies can have. The states of California in the US and Baja California in Mexico have very similar vegetation and forests but different fire control policies. California puts out small fires regularly. Baja California does not. Baja California sees many small fires but there are no big fires. On the other hand, California has few small fires, but it experiences big fires. This is primarily because California keeps putting out small fires which leads to bigger fires. Smaller fires clear the brush, enrich the soil, and also unlock pine seeds.[14]

What does this tell us? As John Mauldin and Jonathan Tepper write in *Endgame – The End of the Debt Supercycle and How It Changes Everything*:

> Global markets and economies are like forest fires … Avoiding small problems creates greater systemic problems when brush between the trees build up … Trying to micromanage small fires in central banking and fiscal policy leads to growing confidence by risk takers, so you get fewer small fires and paradoxically a greater chance of a major catastrophic fire.[15]

Nassim Nicholas Taleb writes along similar lines in *Anti Fragile*:

> Some class of rash, even suicidal, risk taking is healthy for the economy – under the condition that not all people take the same risks and that these risks remain small and localized. Now, by disrupting the model … with bailouts, governments typically favour a certain class of firms that are large enough to require being saved in order to avoid contagion to other businesses … People have difficulty realizing that the solution is building a system in which anybody's fall can drag others down – for continuous failures work to preserve the system.[16]

As we have seen throughout the book, the Federal Reserve has been dousing small fires constantly. And the dousing of these small fires led to the big fire of 2008. Ironically, the Federal Reserve continues to douse small fires. The mistakes that led to the crisis are being made again. Trying to prop up the housing market, and not allowing the housing prices to fall as fast as they would have, is a part of the Fed strategy of dousing fires.

What has happened is exactly the opposite of what Taleb suggests, that 'continuous failures' work to preserve a system. In fact, central banks around the developed world cut interest rates to close to zero per cent after the crisis started and have since maintained them. This is the exact opposite of what Bagehot had suggested. Keeping in mind the issue of moral hazard, he suggested that the Bank of England should be lending money at a very high rate of interest so as to keep speculators away.

Western central banks have kept interest rates at very low levels and allowed speculators to borrow at very low rates of interest. This has led to bubbles in stock markets and other financial markets all over the world.

A major factor that leads to the rescue of banks or financial institutions is the fact that over the years, not enough of them have been let go. We do not really know clearly enough how things are likely to

play out when a bank or financial institution is allowed to go bust. Sadly, unlike the physical sciences, wherein things can be tested out in a laboratory, the same cannot be done in the case of economics. Any learning has to occur from real life.

But a recent example does offer some learning on this front. Several of the biggest banks in Iceland went bust in October 2008. The country let them fail and did not bail them out. It is now doing much better in comparison to other countries in Europe, which bailed out their banks, and in particular, Ireland. As Mark Blyth writes in *Austerity – The History of a Dangerous Idea*: 'Iceland not only survived letting its banks go bust, it became a healthier and more equal society in doing so.'[17]

Of course, Iceland is a very small country, with a population of just 300,000. But what we should be looking at is the fact that the banks that were allowed to fail were ten times the size of the Icelandic economy. As Blyth writes:

> Although Iceland is the definition of tiny, what matters in this case is not the size of the country, or its population, but the size of the banks relative to the size of the economy, its bank-assets-to-GDP ratio. In the United States that ratio was just over one to one. Iceland had 10 times the bust of the United States' worst-case-ever scenario and it not only survived, it prospered.[18]

In fact, an interesting analogy from football can be used to explain why it is difficult to let banks and other financial institutions fail. A football goalkeeper trying to save a penalty jumps towards his left or the right all the time. Research points out that he stays at the centre only 6.3 per cent of the time, even though, 28.7 per cent of the time the penalty taker is likely to blast the ball straight, aimed towards the centre of the goal.[19]

Goalkeepers are more likely to save the goal if they stay where they are and do not jump to their left or right. The trouble is that this strategy will make them look smart only on those occasions when the ball is hit straight. But they are likely to be very embarrassed at other times when the ball hits the back of the net on either their left or right. Just standing there, waiting for the ball to be hit straight and not jumping towards their left or right shows a lack of effort on the part of the goalkeeper. And no goalkeeper would want to be accused of this.[20]

Along similar lines, when banks and financial institutions are in trouble, the governments and central banks need to show that they are making an effort to save them. Letting them fail is a very difficult option

because then they will be accused of not trying. And like a football goalkeeper, no government or central bank would want to be in that situation.

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The international financial system, as it evolved after the end of the Second World War, had the American dollar at the heart of it. And that is how the system has stayed since then. A major factor that has helped the dollar over the years is the fact that oil is bought and sold in dollar terms. As we saw earlier, attempts were made in late 1970s by the OPEC to start pricing oil in a basket of currencies, but that did not happen. If that had happened, the importance of the dollar as a reserve currency would have come down over the last three decades.

A crisis of the kind that happened starting in late 2008 would never have happened primarily because with oil not being priced in dollars but in a basket of currencies, countries around the world would have needed to maintain a significant portion of their international reserves in non-dollar currencies.

The dollar would not have been at the heart of the financial system as it came to be. If the dollar had not been at the heart of the financial system, the American government and its citizens would not have been able to borrow money at low interest rates, as they were and still are able to do. Easy money would not have been the order of the day and there would have been no bubbles of the kind that we ended up with. Or they would at least not have been as big as they finally ended up becoming.

All this wisdom comes with the benefit of hindsight. The important thing here is that money and the financial system evolved in a manner which placed the American dollar at the heart of the financial system. And it continues to be that way.

For the dollar to continue to be an international reserve currency, it is very important that oil continues to be sold in dollar terms. Saudi Arabia remains a close ally of the US despite the fact that the late Osama bin Laden was a Saudi by birth. Osama was the son of Mohammed bin Awad bin Laden and his tenth wife, Hamida al-Attas. The senior bin Laden was a construction magnate who was believed to have had close ties with the Saudi royal family.

The Arab Spring which saw a spate of countries in the Middle East throwing out their dictators and adopting democracy did not have much of an impact in Saudi Arabia. But the danger remains nevertheless. The

Sunnis form the major part of the population in Saudi Arabia. The Shias form only around 10–15 per cent of the population. But most of the biggest oilfields in Saudi Arabia are located in areas where the latter have a significant presence.

During the Arab Spring there were protests in Bahrain where Shias are the leading community even while the country is ruled by Sunnis. Forces were sent from Saudi Arabia to Bahrain to crush the protests. This was primarily done to ensure that protests by the Shias in Bahrain did not spill over to Saudi Arabia.

The broader point is that for OPEC to continue pricing oil in dollars, Saudi Arabia, the country which produces the most oil and has the most reserves within OPEC, should want to continue pricing oil in dollars. This will happen as long as the Al Sa'uds continue to rule Saudi Arabia. For this they need to ensure that the country does not go through any revolution like some of its neighbours have been through in the recent past. It is important to remember that the American security guarantee made by Roosevelt after the Second World War was extended neither to the people of Saudi Arabia nor to the Government of Saudi Arabia but to the ruling clan of Al Sa'uds.

As oil prices have gone up, the Saudi rulers have been able to run one of the most lavish welfare systems in the world. This has helped them to buy political legitimacy and the support of its citizens. For a very long time, the citizens of Saudi Arabia paid no tax and had access to free health care and education. At the same time, housing, electricity, food and fuel were subsidized. All this was possible because of all the money that was being earned by selling oil. The Al Sa'uds also set up a secret police department which kept track of dissidents to ensure that any democratic movement would be nipped in the bud.[21]

Nevertheless, at the ground level, things have not been as good as they were in the past. All Saudi Arabia has is money from oil. No effort has been made to build any other industry. And this money now needs to be spread among a larger number of people than ever before. As David Strahan writes in *The Last Oil Shock*:

> Since their heydays in the early 1980s, Saudi finances have deteriorated badly, and social benefits have been cut back … For decades the fundamental contradiction of Saudi Arabian society has been that a population that largely adheres to Wahabism, the most puritanical … sect of Islam, is ruled by royal family that is venal, bloated and westward-leaning. The absolute monarchy has only managed to survive because its control of oil has

> allowed [it] to buy American protection, and to bribe its own people.[22]

If the political system in Saudi Arabia does break down and the Al Sa'uds are thrown out of power, then the entire arrangement of OPEC pricing oil in dollars may be in trouble. But it is difficult to predict if something like this will occur. There are too many questions which do not have easy answers. Having said that, the chances of a change of regime happening in Saudi Arabia right now are rather low. If at all there is a revolution in Saudi Arabia, how will the Americans intervene? Will they try and throttle any democratic protests in the kingdom? If they do, they will be going against the famous phrase in the American Declaration of Independence: 'We hold these truths to be self-evident, that all men are created equal, that they are endowed by their creator with certain unalienable rights, that among these are life, liberty and the pursuit of happiness.' If a new democratic regime does come to power, it is not necessary that they will go against the US or the dollar and price oil in a basket of currencies and not the dollar.

It is worth remembering that at the end of the Second World War, the US turned into a global policeman. These days, it is the only global policeman.

There are a host of other factors as well (which are dealt with in detail in the next volume in the *Easy Money* series), which seem to suggest that the dollar will continue to be at the heart of the international financial system. As Barry Eichengreen writes in *Exorbitant Privilege – The Rise and Fall of the Dollar*:

> One recent study for Canada, a country with especially detailed data, shows that nearly 75 per cent of all imports from countries other than the United States continue to be invoiced and settled in dollars. The dollar similarly remains the dominant currency in the foreign exchange market. The most recent Bank for International Settlements survey showed that dollar was used in 85 per cent of foreign exchange transactions worldwide, down only marginally from 88 per cent in 2004. Some 45 per cent of international debt securities are denominated in dollars.[23]

Eichengreen's book was released in 2011 and there is no reason to believe that the numbers cited would have changed much since then. Another good data point to look at is the composition of the total foreign exchange reserves held by countries all over the world. The IMF

compiles this data.

The problem here is that a lot of countries declare only their total foreign exchange reserves without going into the composition of those reserves. The fund divides the foreign exchange data into allocated reserves and total reserves. Allocated reserves are reserves for countries which give the composition of their foreign exchange reserves and tell us exactly what currencies they hold as a part of their foreign exchange reserves.

We can take a look at the allocated reserves over a period of time and figure out whether the composition of the foreign exchange reserves of countries around the world is changing. Are countries moving more and more of their reserves out of the dollar and into other currencies?

Dollars formed 71 per cent of the total allocable foreign exchange reserves in 1999, when the euro had just started functioning as a currency. Since then, the proportion of foreign exchange reserves that countries hold in dollars has continued to fall. In fact, in the third quarter of 2008 (around the time Lehman Brothers went bust), dollars formed around 64.5 per cent of the total allocable foreign exchange reserves. This kept falling, and by the first quarter of 2010, it was at 61.8 per cent. It has fallen slightly since then, and as per the latest data, as of the first quarter of 2013, dollars formed 61.4 per cent of the total allocable foreign exchange reserves.[24]

The euro which was seen as a challenger to the dollar has fizzled out because Europe is in a bigger financial and economic mess than the US. There is no alternative to the dollar and it continues to be at the heart of the international financial system. This will continue to have its repercussions, as it has in Japan and the five other Asian countries first and then in the US, in the form of the dot-com and real estate bubbles.

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Robert Lucas Jr, an economist from the University of Chicago, won the Nobel Prize in economics in 1995. He was elected president of the American Economic Association in 2002. In a speech he gave in January 2003 he said:

> Macroeconomics was born as a distinct field in the 1940s, as a part of the intellectual response to the Great Depression. The term then referred to the body of knowledge and expertise that we hoped would prevent the recurrence of economic disaster. My thesis in this lecture is that macroeconomics in this original sense has succeeded. Its central problem of depression-prevention has

> been solved, for all practical purposes, and has in fact been solved for many decades.[25]

One of the reasons for this extreme confidence was the fact that central banks around the world were able to control inflation starting in the 1980s. As we saw earlier, in the 1960s and '70s, the American government had run up huge budget deficits, leading to high inflation. This was primarily on account of the US running up massive expenditure to pay for its huge military establishment all over the world. Those were the days when the bastardized version of Keynes' theory had taken over the political establishment all over the world and it was fashionable to run budget deficits.

Paul Volcker took over as the chairman of the Federal Reserve in August 1979, at a time when inflation was in double digits. By the time he departed in 1987, inflation was at four per cent. He had managed to kill inflation through a series of interest rate hikes. As Daniel L. Thornton, vice-president and economist at the Federal Reserve Bank of St Louis, writes in a research paper titled 'How Did We Get to Inflation Targeting and Where Do We Need to Go to Now? A Perspective from the U.S. Experience':

> This remarkable experience demonstrated beyond reasonable doubt that central banks could control inflation. The West Germans and Swiss also affected perceptions of inflation control. Both central banks were committed to keeping inflation low … moreover, both countries fared much better than most of their European counterparts … At a bare minimum, the U.S. experience accelerated the evolution to inflation targeting.[26]

And this ensured that inflation targeting became a favourite policy of central banks all over the world. This strategy essentially involves a central bank estimating and projecting an inflation target, which may or may not be made public, and then using interest rates and other monetary tools to steer the economy towards the projected inflation target. And it worked like a dream during the 1980s in helping keep inflation at low levels. In 1990, consumer price inflation in the US was at 5.4 per cent. In 1991, it was a little lower at 4.2 per cent. During the 1990s, inflation was low and it remained between 1.5 and 3 per cent.

This led to the Greenspan-led Federal Reserve keeping interest rates low through most of the 1990s. Low interest rates did not lead to inflation, with people borrowing and spending more, primarily because

of China. As Niall Ferguson writes in *The Ascent of Money – A Financial History of the World*:

> Chinese imports kept down US inflation. Chinese savings kept down US interest rates. Chinese labour kept down US wage costs.
>
> As a result, it was remarkably cheap to borrow money and remarkably profitable to run a corporation.[27]

So interest rates continued to remain low because inflation was low. Inflation was low because of goods that were being imported from China into the US. As interest rates continued to remain low, the dot-com bubble went from strength to strength. The Federal Reserve did not raise interest rates because inflation targeting was at work. And if inflation was low, what was the need to increase interest rates? The dot-com bubble be damned!

The same dynamic played itself out in the first decade of the millennium, when real estate bubbles popped up in different parts of the developed world. Inflation targeting might have been one of the major reasons behind the current financial crisis. Stephen D. King, group chief economist of HSBC makes this point in his book *When the Money Runs Out*. As he writes, 'The pursuit of inflation-targeting … may have contributed to the West's financial downfall.'[28]

He gives the example of the UK to make his point:

> Take, for example, inflation targeting in the UK. In the early years of the new millennium, inflation had a tendency to drop too low, thanks to the deflationary effects on manufactured goods prices of low-cost producers in China and elsewhere in the emerging world. To keep inflation close to target, the Bank of England loosened monetary policy with the intention of delivering higher 'domestically generated' inflation. In other words, credit conditions domestically became excessively loose … The inflation target was hit only by allowing domestic imbalances to arise: too much consumption, too much consumer indebtedness, too much leverage within the financial system and too little policy-making wisdom.[29]

In other words, what this basically means is that the Bank of England, the British central bank, kept interest rates too low for a very long time, leading to people borrowing and spending money. This was done in the hope that prices would rise and the inflation target would

thus be met. A similar dynamic played out in the US, where inflation between 2001 and 2004 varied between 1.6 and 2.7 per cent. It was only in the second half of 2004 that the Greenspan-led Federal Open Market Committee (FOMC) finally started to increase the interest rates. But by then, the real estate bubble was in full flow.

With interest rates low, banks were falling over one another to lend money to anyone who was willing to borrow. And this gradually led to a fall in lending standards. People who did not have the ability to repay were also being given loans. As King writes, 'With the UK financial system now awash with liquidity, lending increased rapidly both within the financial system and to other parts of the economy that, frankly, did not need any refreshing. In particular, the property sector boomed thanks to an abundance of credit and a gradual reduction in lending standards.'[30]

Western central banks were focused on maintaining the inflation target that they had set. In fact, the 'inflation only' focus was a result of how economic theory had evolved over the years. As Felix Martin writes in the fascinating book *Money – The Unauthorised Biography*:

> The sole monetary ill that had been permitted into the New Keynesian theory was high or volatile inflation, which was deemed to retard the growth of GDP. The appropriate policy objective, therefore, was low and stable inflation, or 'monetary stability'… On such grounds, the Bank of England was granted its independence and given a mandate to target inflation in 1997, and the European Central Bank was founded as an independent, inflation-targeting central bank in 1998.[31]

But this focus on 'low inflation' or 'monetary stability' as the economists like to call it, turned out to be a very narrow policy objective. As Martin writes:

> The single-minded pursuit of low and stable inflation not only drew attention away from the other monetary and financial factors that were to bring the global economy to its knees in 2008 – it exacerbated them … Disconcerting signs of impending disaster in the pre-crisis economy – booming housing prices, a drastic under-pricing of liquidity in asset markets, the emergence of the shadow banking system, the declines in lending standards, bank capital, and the liquidity ratios – were not given the priority they merited, because, unlike low and stable inflation,

they were simply not identified as being relevant.[32]

Inflation targeting, as a policy, worked when inflation was high and central banks wanted to bring it down. Since the mid-1990s, inflation has been low in much of the Western world thanks to Chinese imports. This has led to inflation targeting being used in reverse. Instead of trying to control inflation, Western central banks have been trying to create it, using the same sets of tools. As Gary Dugan, the CIO, Asia and Middle East, RBS Wealth Division, told this author in an interview:

> The idea of controlling inflation, the concept, worked for the 20 years of the bull market. Then, we got inflation which was too low. So, we have changed it all around to actually try to create inflation, rather than to dampen it. I don't think they know what tools they should be using. The central banks are using the same tools they used to dampen inflation, in a reverse way, in order to create it. And that is clearly not working.[33]

Since the start of the current financial crisis, central banks around the world have tried to concentrate on factors other than inflation as well. But it is not easy for a central bank, if I might use that phrase, to be all over the place. And being all over the place has its own set of problems. Raghuram Rajan, the former governor of the Reserve Bank of India (RBI), the Indian central bank, and formerly the chief economist of the IMF and a professor at the University of Chicago, explained the perils of a central bank being all over the place in an article he wrote with the economist Eswar Prasad. 'What is wrong with this? Simply that by trying to do too many things at once, the RBI risks doing none of them well.'[34]

And what is true for the RBI is true for other central banks as well.

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'Macroeconomics was born as a distinct field in the 1940s, as a part of the intellectual response to the Great Depression,' said Nobel Prize winning economist Robert Lucas Jr. Economic thinking on the Great Depression has had a great impact on American economists as well as central bankers.

In 1963, Milton Friedman along with Anna J. Schwartz wrote *A Monetary History of the United States, 1867–1960,* which also featured a revisionist history of the Great Depression. What Friedman and Schwartz basically argued was that the Federal Reserve system ensured

that what was just a stock market crash turned into the Great Depression.

Between 1929 and 1933, more than 7,500 banks with deposits amounting to nearly $5.7 billion went bankrupt.[35] This, according to Friedman and Schwartz led to the total amount of currency in circulation and demand deposits at banks plunging by a third. With banks going bankrupt, the depositors' money was either stuck or totally gone. In this situation, they cut down on their expenditure further to try and build their savings up again. This converted what was basically a stock market crash into the Great Depression.

If the Federal Reserve had pumped more money into the banking system at that point of time, enough confidence would have been created among the depositors who had lost their money and the Great Depression could have been avoided.

This thinking on the Great Depression came to dominate the American economic establishment over the years. Friedman believed that because the American government and the Federal Reserve of the day had let the banks fail, this led to a massive contraction in the money supply, which, in turn, led to an environment of falling prices and finally, the Great Depression.

It was no surprise that when the Dow Jones had a freak crash in October 1987, Alan Greenspan, who had just taken over as chairman of the Federal Reserve flooded the system with money.

Greenspan kept flooding the system with money by cutting interest rates at the slightest hint of trouble. This led to a situation where investors started to believe that, come what may, Greenspan and the Federal Reserve would come to their rescue. This increased their appetite for risk and, finally, led to the dot-com and the real estate bubbles in the US.

In fact, such was Friedman's influence on economic thinking that Ben Bernanke, who would take over as chairman of the Federal Reserve after Greenspan, said at a conference to mark the ninetieth birthday celebrations of Friedman in 2002: 'I would like to say to Milton and Anna: Regarding the Great Depression. You're right, we did it. We're very sorry. But thanks to you, we won't do it again.'[36]

Bernanke was a member of the Board of Governors of the Federal Reserve and what the use of the word 'we' effectively meant was that in the days and years to come the Federal Reserve would flood the financial system with money at the slightest sign of trouble.

This is precisely what Bernanke and the American government did once the financial crisis broke out in late 2008. A lot of easy money

became available for speculators to borrow, leading to bubbles in various financial markets around the world.

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Central banks have been reluctant bubble prickers because of what happened in Japan after its real estate and stock market bubbles were pricked in 1989. Japan had seen a very fast pace of economic growth after the Second World War. This astronomical rate of growth continued until the first oil shock struck in 1973. Even after that, the growth continued, though at a slower rate. In fact, between 1950 and 1991, the per capita income in Japan rose from 20 per cent of that in the US to around 85 per cent.[37]

But after the stock market and real estate bubbles were pricked, Japan has seen a steady decline. In fact, at one point of time, the Japanese per capita income dropped to around 72 per cent of that in the US. The country has seen a persistent problem of deflation (i.e., falling prices) and has been unable to extricate itself from the same despite throwing a lot of money at it.[38]

All central bankers obviously consider the Japanese experience when they wish to prick an asset or investment bubble by raising interest rates.

There is another factor that comes into play in the reluctance to prick bubbles. It is the way economic theory has evolved over the years. In the second half of the twentieth century, the efficient market hypothesis, put forward by economist Eugene Fama has had a great impact on economic thinking. As Mark Buchanan explains in *Forecast – What Physics, Meteorology and the Natural Sciences Can Teach Us about Economics*:

> In this view, a market is a vast crowd of investors with diverse interests and skills all working hard to gather information on every kind of manufacturing company, bank, nation, technology, raw material, and so on. They use that information to make best investments they can, jumping on any new information that might affect prices as it comes along, and using that information to profit. They sell stocks, bonds, or other instruments, which are currently overvalued and buy undervalued ones. These very actions act to drive the prices back toward their proper, realistic, or 'intrinsic' values.[39]

This means that various assets, whether stocks, bonds, commodities or real estate are always, at any point of time, priced correctly and their prices reflect their underlying fundamentals (or what has been called

'proper, realistic, or intrinsic value' earlier). And if the assets are correctly priced, there can be no question of any speculative bubbles occurring. Just as Say's law ruled out any recessions, till a Keynes corrected it, as per the efficient market hypothesis there can be no bubbles.

As John Cassidy writes in *How Markets Fail – The Logic of Economic Calamities*:

> During the 1960s and 1970s, a group of economists, many of them associated with the University of Chicago, promoted the counter-intuitive idea … that speculative bubbles don't exist. The efficient market hypothesis … states that financial markets always generate the correct prices, taking into account all of the available information…In short, financial prices are tied to economic fundamentals: they don't reflect any undue pessimism or 'irrational exuberance' – the famous phrase that Alan Greenspan introduced to the American lexicon in December 1996. If markets rise above the levels justified by fundamentals, well-informed speculators step in and sell until prices return to their correct levels. If prices fall below their true values, speculators step in and buy.[40]

An old joke explains the efficient market hypothesis in a much simpler way:

> Q: How many Chicago School economists does it take to change a light bulb?
> A: None. If the light bulb needed changing, the market would have already done it.

At any point of time, the market price is the correct price. Where is the question of any bubbles popping up? As Fama put it in a 2010 interview, 'I don't even know what a bubble means. These words have become popular. I don't think they have any meaning.'[41]

Robert Lucas also defended the efficient market hypothesis. As he put it:

> The main lesson we should take away from the EMH for policymaking purposes is the futility of trying to deal with crises and recessions by finding central bankers and regulators who can identify and puncture bubbles. If these people exist, we will not be able to afford them.[42]

It is surprising that economists have had so much confidence in a theory for which the evidence is at best sketchy. Raj Patel makes this point in *The Value of Nothing*:

> The problem with efficient market hypothesis is that it does not work. If it were true, there'd be no incentive to invest in research because the market would, by magic, have beaten you to it. Economists Sanford Grossman and Joseph Stiglitz demonstrated this in 1980, and hundreds of subsequent studies have pointed out quite how unrealistic the hypothesis is, and some of the most influential were written by Eugene Fama himself.[43]

Despite this, the economic thought that has prevailed since the 1960s has been that market prices reflect the fundamentals and that there is no chance of bubbles arising. Even if bubbles do pop up now and then, there is no chance of identifying them in advance. Alan Greenspan believed that a central bank could not spot a bubble but could hope to mitigate its fallout once it burst. This led to him letting the dot-com bubble run. A few years later, he let the real estate bubble run as well. He was just following the economic theory that has dominated over the last few decades. As Patel writes:

> Despite ample economic evidence to suggest it was false, the idea of efficient markets ran riot through governments. Alan Greenspan was not the only person to find the hypothesis a convenient untruth. By pushing regulators to behave as if the hypothesis were true, traders could make their titanic bets … Governments enabled the finance sector's binge by promising to be there to pick up the pieces, and they were as good as their word.[44]

When Greenspan did realise that the model does not work, he admitted before a committee of the House of Representatives in October 2008 that 'I found a flaw in the model that I perceived is the critical functioning structure that defines how the world works, so to speak … I had been going for 40 years or more with very considerable evidence that it was working exceptionally well.'[45]

Alan Greenspan has been honest enough to admit that the old way of thinking does not work any more. Perhaps it never did. But economists are still not ready to give up on the efficient market hypothesis (as the statements of Eugene Fama and Robert Lucas Jr clearly show). The dazzle of efficient market hypothesis has blinded economists so much

that they cannot spot bubbles any more.

There are many lessons that history offers us, but it is up to us whether we learn from it or not. As George Akerlof and Paul Romer wrote in a research paper titled 'Looting: The Economic Underworld of Bankruptcy for Profit': 'If we learn from experience, history need not repeat itself.'[46] If only that were the case!

Notes

Preface

1Conversation with the author.
2W.G. Sumner, 'Shall Silver Be Demonetized?' *The North American Review,* 140(343), June 1885: 485–97.

1: 'Coup De Whiskey'

1J. Brooks, *Once in Golconda – A True Drama of Wall Street 1920–1938*, New York: John Wiley & Sons Inc., 1999.
2Ibid.
3J. Rothchild, 'When the Shoeshine Boys Talk Stocks It Was a Great Sell Signal in 1929. So What Are the Shoeshine Boys Talking about Now?', 1996. Available at http://money.cnn.com/magazines/fortune/fortune_archive/1996/04/15/211503/index.htm (accessed on 9 March 2012).
4H. Sidney, 'The Dynasty of the Kennedys', 1999. Available at http://www.time. com/time/magazine/article/0,9171,991275,00.html (accessed on 9 March 2012).
5B. Baruch, *Baruch – The Public Years*, New York: Holt, Rinehart and Winston, 1960.
6E.N. White, 'The Stock Market Boom and Crash of 1929 Revisited,' *The Journal of Economic Perspectives,* 4, 1990: 67–83.
7J.K. Galbraith, *The Great Crash 1929*, New York: Penguin, 1992.
8R.J. Shiller, *Irrational Exuberance,* New York: Doubleday, 2005.
9P. Rappoport and E.N. White, 'Was There a Bubble in the 1929 Stock Market?', *The Journal of Economic History,* 53, 1993: 549–74.
10E.N. White, 'The Stock Market Boom and Crash of 1929 Revisited,' *The Journal of Economic* Perspectives, 4, 1990: 67-83.
11R.J. Shiller, *Irrational Exuberance*, New York: Doubleday, 2005.
12E.N. White, `The Stock Market Boom and Crash of 1929 Revisited,' *The Journal of Economic Perspectives*, 4, 1990: 67-83..
13M. Rothbard, *America's Great Depression*, Alabama: The Ludwig von Mises Institute, 2000.
14Ibid.
15Ibid.
16J. Brooks, *Once in Golconda – A True Drama of Wall Street 1920–1938*, New York: John Wiley & Sons Inc., 1999.
17M. Rothbard, *America's Great Depression*, Alabama: The Ludwig von Mises Institute, 2000.
18J.A. Paulos, *A Mathematician Plays the Stock Market*, New York: Basic Books, 1993.
19P. Rappoport and E.N. White, 'Was There a Bubble in the 1929 Stock Market?', *The Journal of Economic History*, 53, 1993: 549–74.
20G. Smiley and R.H. Keehn, 'Margin Purchases, Brokers' Loans and the Bull Market of the Twenties', *Business and Economic History,* 17, 1988: 129–42.
21W.N. Peach, *The Security Affiliates of National Banks,* Baltimore: John Hopkins Press, 1941.
22P. Rappoport and E.N. White, 'Was There a Bubble in the 1929 Stock Market?', *The Journal of Economic History*, 53, 1993: 549–74.

23J.K. Galbraith, *The Great Crash 1929*, New York: Penguin, 1992.
24J.B.D. Long and A. Shleifer, 'The Stock Market Bubble of 1929: Evidence from Closed Ended Mutual Funds', *The Journal of Economic History,* 51, 3,1991: 675–700.
25J.K. Galbraith, *The Great Crash 1929*, New York: Penguin, 1992.
26P. Rappoport and E.N. White, 'Was There a Bubble in the 1929 Stock Market?', *The Journal of Economic History*, 53, 1993: 549-74.
27J. Brooks, *Once in Golconda – A True Drama of Wall Street 1920-1938*, New York: John Wiley & Sons Inc., 1999.
28L. Ahamed, *Lords of Finance – 1929, The Great Depression, and The Bankers Who Broke the World*, London: Windmill Books, 2010.
29J. Brooks, *Once in Golconda – A True Drama of Wall Street 1920–1938*, New York: John Wiley & Sons Inc., 1999.
30Ibid.
31J. Strouse, *Morgan: American Financer*, New York: Random House, 1999.
32M. Klein, *Rainbow's End: The Crash of 1929*, New York: Oxford University Press, 2001.
33Ibid.
34Ibid.
35M. Rothbard, *America's Great Depression*, Alabama: The Ludwig von Mises Institute, 2000.
36J. Brooks, *Once in Golconda – A True Drama of Wall Street 1920-1938*, New York: John Wiley & Sons Inc., 1999.
37Ibid.
38R.G. Rajan and L. Zingales, *Saving Capitalism from the Capitalists*, New York: Crown Business, 2003.
39Ibid.
40J.K. Galbraith, *The Great Crash 1929*, New York: Penguin, 1992.
41M.N. Rothbard, *America's Great Depression*, Alabama: The Ludwig von Mises Institute, 2000.
42P. Cabel, *From the Crash to the Blitz 1929–1939*, New York: Fordham University Press, 2000.
43Ibid.
44Ibid.
45M. Klein, 'The Stock Market Crash of 1929: A Review Article', *The Business History Review,* 75, 2001: 325–51.
46Ibid.
47M. Skousen, *The Making of Modern Economics*, Armonk, New York: M. E. Sharpe, 2009.
48G. Poitras, *Valuation of Equity Securities*, Singapore: World Scientific Publishing Company, 2011.
49T.K. McGraw, 'Lives of Great Economists. Fisher: A Biography by Robert Loring Allen; Joseph Alois Schumpeter: The Public Life of a Private Man by Wolfgang F. Stolper; Ronald H. Coase by Stephen G. Medem', *The Journal of Economic History,* 55, 1995: 683–93.
50Ibid.
51S. Nasar, *Grand Pursuit – The Story of Economic Genius* London: Fourth Estate, 2011.
52A discussion on the crash of 1929. Available at http://www.pbs.org/wgbh/americanexperience/features/transcript/crash-transcript/ (accessed on 12 March 2012).
53P. Cabel, *From the Crash to the Blitz 1929-1939*, New York: Fordham University Press, 2000.
54L.D. Edie, 'The Banks and the Stock Market Crisis of 1929', *The Journal of Business of the University of Chicago*, 3, 1930: 16–21.
55I. Fisher, 'The Stock Market Panic in 1929', *Journal of the American Statistical Association,* 25, 1930: 93–96.
56I. Fisher, 'The Debt Deflation Theory of Great Depressions', *Econometrica*, 1, 4, 1933: 337–57.
57M.N. Rothbard, *A History of Money and Banking in the United States: The Colonial Era to World War II,* Alabama: Ludwig von Mises Institute, 2002.
58T.K. McGraw, 'Lives of Great Economists. Fisher: A Biography' by Robert Loring Allen; *The Journal of Economic History*, 55, 1995: 683–93.
59E.R. McGrattan and E.C. Prescott, 'The 1929 Stock Market: Irving Fisher Was Right',

International Economic Review, November 2004: 991–1009.
60R. Napier, *Anatomy of the Bear,* New Delhi: CLSA Books, 2005.
61S. Das, *Extreme Money – Masters of the Universe and the Cult of Risk* Upper Saddle River, NJ: FT Press, 2011.
62J.K. Galbraith, *The Great Crash 1929*, New York: Penguin, 1992.
63E. Lefèvre, *Reminiscences of a Stock Operator,* New York: John Wiley & Sons, 1923.
64J. Brooks, *Once in Golconda – A True Drama of Wall Street 1920-1938*, New York: John Wiley & Sons Inc., 1999.
65E. Lefèvre, *Reminiscences of a Stock Operator*, New York: John Wiley & Sons, 1923.
66J. Brooks, *Once in Golconda – A True Drama of Wall Street 1920-1938*, New York: John Wiley & Sons Inc., 1999.
67C.P. Kindleberger and R. Aliber, *Manias, Panics and Crashes – A History of the Financial Crises*, Hoboken, New Jersey: John Wiley & Sons Inc., 2005.

2: The Great Depression

1H.P. Minsky, *Stabilizing an Unstable Economy*, New York: McGraw-Hill, 2008.
2J. Cassidy, *How Markets Fail – The Logic of Economic Calamities*, London: Penguin Allen Lane, 2009.
3H.P. Minsky, *Stabilizing an Unstable Economy*, New York: McGraw-Hill, 2008.
4E.N. White, 'The Stock Market Boom and Crash of 1929 Revisited', *The Journal of Economic Perspectives,* 4, 1990: 67–83.
5H. Bierman, *The Great Myths of 1929 and the Lessons to Be Learned*, New York and Westport: Greenwood Press, 1991.
6C.P. Kindleberger, '1929: Ten Lessons for Today', *Challenge,* 30, 6, 1987: 15–18.
7L. Ahamed, *Lords of Finance – 1929, The Great Depression, and the Bankers Who Broke the World,* London: Windmill Books, 2010.
8C.P. Kindleberger, `1929: Ten Lessons for Today', *Challenge*, 30, 6, 1987: 15-18.
9C.D. Romer, *Lessons from the Great Depression for the Economic Recovery in 2009,* Brookings Institution, 2009.
10Ibid.
11M. Klein, *Rainbow's End: The Crash of 1929,* New York: Oxford University Press, 2001.
12V. Kaul, 'Change Doesn't Come Gradually in Our World, It Comes in Tumultuous Chunks: Mark Buchanan', *The Economic Times,* 17 February 2012.
13C.P. Kindleberger, '1929: Ten Lessons for Today', *Challenge*, 30, 6, 1987: 15-18.
14C.P. Kindleberger, 'Crashes, Crises and Moral Capital', *Challenge,* 34, 4, 1991: 23–28.
15C.P. Kindleberger, 'Manias and How to Prevent Them', *Challenge,* 40, 6, 1997: 21–31.
16J.K. Galbraith, *The Great Crash 1929,* New York: Penguin, 1992.
17American Census of 1930. Available at http://www2.census.gov/prod2/stat-comp/documents/1931-02.pdf (accessed on 13 March 2012).
18American Census of 1940. Available at http://www2.census.gov/prod2/stat- comp/documents/1941-02.pdf (accessed on 13 March 2012).
19T.G. Buchholz, *New Ideas from Dead Economists: An Introduction to Modern Economic Thought*, New York: Plume, 2007.
20J.K. Galbraith, *A History of Economics – The Past as the Present*, Harmondswoth: Penguin, 1991.
21R. Skidelsky, *Keynes – The Return of the Master,* London: Allen Lane, 2009.
22Ibid.
23John Cassidy, *How Markets Fail – The Logic of Economic Calamities*, London: Penguin Allen Lane, 2009.
24E. Porter, *The Price of Everything – Solving the Mystery of Why We Pay What We Do,* London: Portfolio/Penguin, 2011.
25M.N. Rothbard, *America's Great Depression,* Alabama: The Ludwig von Mises Institute, 2000.

26Ibid.
27Ibid.
28Ibid.
29Ibid.
30Ibid.
31H. Hazlitt, *From Bretton Woods to World Inflation: A Study of Causes and Consequences,* Chicago: Regenry Gateway, 1984.
32M.N. Rothbard, *America's Great Depression*, Alabama: The Ludwig von Mises Institute, 2000.
33F.W. Taussig, *The Tariff History of the United States*, 8th ed., New York: G.P. Putnam's Sons, 1931.
34'The Battle of Smoot-Hawley', *The Economist,* 18 December 2008.
35H. Hazlitt, *From Bretton Woods to World Inflation: A Study of Causes and Consequences*, Chicago: Regenry Gateway, 1984.
36J.L. Shover, 'The Farmers' Holiday Association Strike, August 1932', *Agricultural History,* 39, 4, 1965: 196–203.
37A. Burke, 'Bankrupt in the Richest Nation, Farmers Rampage in Plymouth County', 2008. Available at http://iowaindependent.com/2260/bankrupt-in-the-richest-nation-farmers-rampage-in-plymouth-county (accessed on 18 March 2012).
38J.L. Shover, 'The Farmers' Holiday Association Strike, August 1932', *Agricultural History*, 39, 4, 1965: 196-203.
39Burke, 'Bankrupt in the Richest Nation, Farmers Rampage in Plymouth County'.
40M.N. Rothbard, *America's Great Depression*, Alabama: The Ludwig von Mises Institute, 2000.
41W.C. Pratt, 'Rethinking the Farm Revolt of the 1930s,' *Great Planes Quarterly,* 1988: 1–15.
42Burke, 'Bankrupt in the Richest Nation, Farmers Rampage in Plymouth Count'.
43A.M. Richards, *Understanding Exchange Traded Funds,* New York: McGraw-Hill, 2007.
44J.K. Galbraith, *Money – Whence It Came, Where It Went*, Boston and New York: Houghton Mifflin Company, 1995.
45'The Great Depression'. Available at http://b-29soverkorea.com/TheGreatDe-pression/TheGreatDepression1.html (accessed on 18 March 2012).
46M.N. Rothbard, *America's Great Depression*, Alabama: The Ludwig von Mises Institute, 2000.
47J.W. Angell, 'Gold, Banks and the New Deal', *Political Science Quarterly*, 49, 4, 1934: 481–505.
48Galbraith, *Money – Whence It Came, Where It Went.*
49M.N. Rothbard, *America's Great Depression*, Alabama: The Ludwig von Mises Institute, 2000.
50'The Great Depression'. Available at http://b-29soverkorea.com/TheGreat-Depression/TheGreatDepression1.html (accessed on March 18, 2012).
51M.D. Flood, 'The Great Deposit Insurance Debate', *Federal Reserve Bank of St. Louis Review*, 74, 4, 1992: 51–77.
52M.N. Rothbard, *America's Great Depression*, Alabama: The Ludwig von Mises Institute, 2000.
53M.D. Flood, 'The Great Deposit Insurance Debate', *Federal Reserve Bank of St. Louis Review*, 74, 4, 1992: 51-77.
54L. Ahamed, *Lords of Finance – 1929, The Great Depression, and the Bankers Who Broke the World*, London: Windmill Books, 2010.
55C.W. Calomiris and J.R. Mason, 'Contagion and Bank Failures during the Great Depression: The June 1932 Chicago Banking Panic', *American Economic Review*, 87, 5, 1997: 863–83.
56Ibid.
57F.G. Awalt, 'Recollections of the Banking Crisis in 1933', *Business History Review,* 43, 3, 1969: 347–71.
58Ibid.
59Ibid.

60Ibid.
61Ibid.
62W.L. Sibler, 'Why Did FDR's Bank Holiday Succeed?' *Economic Policy Review,* July, 2009: 19–30.
63Ibid.
64F.A. Bradford, 'The Banking Act of 1935', *The American Economic Review,* 25, 4, 1935: 661–72.
65Ibid.
66Ibid.
67J.W. Angell, 'Gold, Banks and the New Deal', *Political Science Quarterly*, 49, 4, 1934: 481-505.
68M.D. Flood, `The Great Deposit Insurance Debate', *Federal Reserve Bank of St. Louis Review*, 74, 4, 1992: 51-77.
69Ibid.
70S.E. Kennedy, *The Banking Crisis of 1933*, Lexington: University Press of Kentucky, 1973.
71A.D. Gayer, 'The Banking Act of 1935', *The Quarterly Journal of Economics,* 50, 1, 1935: 97–116.
72R.S. Krozner and R.G. Rajan, 'Is the Glass Steagall Act Justified? A Study of the U.S. Experience with Universal Banking', *The American Economic Review*, 4, 4, 1994: 810–32.
73P.H. Willis, 'The Banking Act of 1933 in Operation', *Columbia Law Review,* 35, 5, 1935: 697–724.
74J. Grant, *Mr Market Miscalculates – The Bubble Years and Beyond*, Mount Jackson: Axios Press, 2008.
75Ibid.
76J. Brooks, *Once in Golconda – A True Drama of Wall Street 1920–1938*, New York: John Wiley & Sons Inc., 1999.
77E. Wicker, 'Roosevelt's 1933 Monetary Experiment', *The Journal of American History*, 57, 4, 1971: 864–79.
78Ibid.
79J. Powell, 'Roosevelt's Crusade against Gold', *Freedom Daily*, June …. Available at http://www.fff.org/freedom/fd0906e.asp (accessed on 19 March 2012).
80Executive Order 6102.
81J. Powell, 'Roosevelt's Crusade against Gold', *Freedom Daily*, June …. Available at http://www.fff.org/freedom/fd0906e.asp (accessed on 19 March 2012).
82Ibid.
83J.M. Keynes, *The General Theory of Employment, Interest and Money* London: Palgrave Macmillan, 1936.
84J. Brooks, *Once in Golconda – A True Drama of Wall Street 1920-1938*, New York: John Wiley & Sons Inc., 1999.
85J.W. Angell, 'Gold, Banks and the New Deal', *Political Science Quarterly*, 49, 4, 1934: 481-505.
86J. Powell, 'Roosevelt's Crusade against Gold', *Freedom Daily*, June …. Available at http://www.fff.org/freedom/fd0906e.asp (accessed on 19 March 2012).
87J.W. Angell, 'Gold, Banks and the New Deal', *Political Science Quarterly*, 49, 4, 1934: 481-505.
88J. Brooks, *Once in Golconda – A True Drama of Wall Street 1920-1938*, New York: John Wiley & Sons Inc., 1999.
89Gayer, 'The Banking Act of 1935; J. Brooks, *Once in Golconda – A True Drama of Wall Street 1920-1938*, New York: John Wiley & Sons Inc., 1999.
90J. Brooks, *Once in Golconda – A True Drama of Wall Street 1920-1938*, New York: John Wiley & Sons Inc., 1999.
91J.K. Galbraith, *A History of Economics – The Past as the Present*, Harmondswoth: Penguin, 1991.
92J. Powell, 'Roosevelt's Crusade against Gold', *Freedom Daily*, June …. Available at http://www.fff.org/freedom/fd0906e.asp (accessed on 19 March 2012).

93J.W. Angell, 'Gold, Banks and the New Deal', *Political Science Quarterly*, 49, 4, 1934: 481-505.

3: The Men Who Knew Too Much

1N. Davenport, *Memoirs of a City Radical*, London: Weidenfeld and Nicolson, 1974.
2P.A. Samuelson, *Economics*, 4th ed., New York: McGraw-Hill, 1958.
3R. Patel, *The Value of Nothing,* London: Portobello Books, 2009.
4F.S. Mishkin, 'The Household Balance Sheet and the Great Depression', *The Journal of Economic History* 38, 4, 1978: 918–37.
5B. Eichengreen, 'Viewpoint: Understanding the Great Depression', *The Canadian Journal of Economics* 37, 1, 2004: 1–27.
6J.M. Keynes, *The General Theory of Employment, Interest and Money*, London: Palgrave Macmillan, 1936.
7R. Patel, *The Value of Nothing*, London: Portobello Books, 2009.
8S. Nasar, *Grand Pursuit – The Story of Economic Genius* (London: Fourth Estate, 2011).
9J.K. Galbraith, *The Affluent Society*, London: Penguin, 1998.
10J.K. Galbraith, *A History of Economics – The Past as the Present*, Harmondswoth: Penguin, 1991.
11S. Nasar, *Grand Pursuit – The Story of Economic Genius* (London: Fourth Estate, 2011).
12Todd Buchholz, *New Ideas from Dead Economists: An Introduction to Modern Economic Thought*, New York: Plume, 2007.
13Ibid.
14B. Snowdown and H.R. Vane, *Conversations with Leading Economists*, Northampton, MA: Edward Elgar, 1999.
15Author's calculations from various sources.
16M. Friedmanm, *Capitalism and Freedom* Chicago: The University of Chicago Press, 1962.
17C.D. Romer, 'What Ended the Great Depression,' *The Journal of Economic History*, 52, 4, 1992: 757–84.
18A.I. Bloomfield, *Capital Imports and the American Balance of Payments, 1934–1939*, Chicago: The University of Chicago Press, 1950.
19F.G. Steindl, 'What Ended the Great Depression? It Was Not the World War II', *The Independent Review,* 12, 2, 2007: 179–97.
20L. Ahamed, *Lords of Finance – 1929, The Great Depression, and the Bankers Who Broke the World*, London: Windmill Books, 2010.
21Romer, 'What ended the Great Depression'.
22Ibid.
23Ibid.
24Steindl, 'What Ended the Great Depression? It Was Not the World War II'.
25Romer, 'What Ended the Great Depression'.
26Steindl, 'What Ended the Great Depression? It Was Not the World War II'.
27Romer, 'What Ended the Great Depression'.
28Steindl, 'What Ended the Great Depression? It Was Not the World War II'.
29M. Friedman and A.J. Schwartz, *A Monetary History of the United States, 1867–1960*, Princeton: The Princeton University Press, 1963.

4: Hitler Falling, Dollar Rising!

1H. Hazlitt, *The Inflation Crisis and How to Resolve It*, New York: Arlington House Publishers, 1978.
2Ibid.
3Ibid.
4Ibid.

5A. Smith, *Paper Money*, New York: Summit Books, 1981.
6D. Grice, 'Some Useful Things I've Learned about Germany's Hyperinflation', *Societe Generale*, 26 February 2010.
7H. Hazlitt, *The Inflation Crisis and How to Resolve It*, New York: Arlington House Publishers, 1978.
8Ibid.
9D. Grice, 'Some Useful Things I've Learned about Germany's Hyperinflation', *Societe Generale*, 26 February 2010.
10H. Hazlitt, *What You Should Know about Inflation*, Princeton: D. Van Nostrand Company Inc., 1965.
11The writing of *Mein Kampf*. Available at http://www.nazism.net/about/adolf_ hitler/mein_kampf/ (accessed on 9 April 2012).
12S. Das, *Extreme Money – Masters of the Universe and the Cult of Risk* Upper Saddle River, NJ: FT Press, 2011.
13S. Dammasch, 'The System of Bretton Woods – A Lesson from History, …. Available at http://www.ww.uni-magdeburg.de/fwwdeka/student/arbeiten/006.pdf (accessed on 9 April 2012).
14D. Moggridge, *Activities 1941–1946: Shaping the Post-War World, Bretton Woods and Reparations,* Vol 2, London: Macmillan, 1980.
15E.P. Hexner, 'The New Gold Standard', *Weltwirtschaftliches Archiv,* 85, 1960: 1–35.
16H. Hazlitt, *The Inflation Crisis and How to Resolve It*, New York: Arlington House Publishers, 1978.
17H. Hazlitt, *From Bretton Woods to World Inflation: A Study of Causes and Consequences*, Chicago: Regenry Gateway, 1984.
18H. Hazlitt, *The Inflation Crisis and How to Resolve It*, New York: Arlington House Publishers, 1978.
19C.S. Chivvis, 'Charles de Gaulle, Jacques Rueff and French International Monetary Policy under Bretton Woods', *Journal of Contemporary History,* 41, 4, 2006: 701–20.
20S. Newton, 'The 1949 Sterling Crisis and British Policy towards European Integration', *Review of International Studies,* 11, 3, 1985: 169–82.
21Ibid.
22T. Balogh, 'Notes on the Dollar Shortage: A Comment', *The American Economic Review,* 41, 3, 1951: 405–09.
23C. Kindleberger, 'The Marshall Plan and the Cold War', *International Journal* 23, 3, 1968: 369–82.
24Ibid.
25Ibid.
26H. Hazlitt, *Will Dollars Save the World?,* New York: Appleton-Century Company, 1947.
27Ibid.
28Ibid.
29Kindleberger, 'The Marshall Plan and the Cold War'.
30Hazlitt, *Will Dollars Save the World?*
31The text of the speech is available at http://www.oecd.org/document/10/0,3746,en_2649_201185_1876938_1_1_1_1,00.html (accessed on 11 April 2012).
32C. Karmin, *Biography of the Dollar – How the Mighty Buck Conquered the World and Why It's Under Siege*, New York: Crown Business, 2008.
33Hazlitt, *Will Dollars Save the World?*
34Kindleberger, 'The Marshall Plan and the Cold War'.
35R. Epstein, 'UK pays off WWII debt to US', 2007. Available at www.abc.net.au/am/content/2007/s1820797.htm (accessed on 11 April 2012).
36Kindleberger, 'The Marshall Plan and the Cold War'.
37Newton, 'The 1949 Sterling Crisis and British Policy towards European Integration'.
38Ibid.
39Ibid.
40Hazlitt, *Will Dollars Save the World?*
41Newton, 'The 1949 Sterling Crisis and British Policy towards European Integration'.

42H. Hazlitt, *From Bretton Woods to World Inflation: A Study of Causes and Consequences*, Chicago: Regenry Gateway, 1984.
43Hazlitt, *What You Should Know about Inflation.*
44Newton, 'The 1949 Sterling Crisis and British Policy towards European Integration'.
45R.N. Gardner, 'Strategy for the Dollar', 38, 3, 1960: 433–45.
46A. Smith, *Paper Money*, New York: Summit Books, 1981.
47Ibid.
48Ibid.
49S. Strange, 'The Dollar Crisis 1971', *International Affairs,* 48, 2, 1972: 191–216.
50J.C. Ingram, 'The Dollar and the International Monetary System: A Retrospective View', *Southern Economic Journal,* 40, 4, 1974: 531–44.
51J. Joesten, 'The "Dollar Invasion" of Western Europe', *Challenge,* 12, 3, 1963: 34–36.
52Ingram, 'The Dollar and the International Monetary System'.
53Strange, 'The Dollar Crisis 1971'.
54A. Smith, *Paper Money*, New York: Summit Books, 1981.
55P. Coggan, *Paper Promises: Money, Debt and the New World Order*, London: Allen Lane, 2011.

5: Exorbitant Privilege

1R.N. Gardner, 'Strategy for the Dollar', 38, 3, 1960: 433–45.
2Ibid.
3C.S. Chivvis, 'Charles de Gaulle, Jacques Rueff and French International Monetary Policy under Bretton Woods', *Journal of Contemporary History,* 41, 4, 2006: 701–20.
4R.N. Gardner, 'Strategy for the Dollar', 38, 3, 1960: 433–45.
5Ibid.
6C.S. Chivvis, 'Charles de Gaulle, Jacques Rueff and French International Monetary Policy under Bretton Woods', *Journal of Contemporary History*, 41, 4, 2006: 701–20.
7R.N. Gardner, 'Strategy for the Dollar', 38, 3, 1960: 433–45.
8C.S. Chivvis, 'Charles de Gaulle, Jacques Rueff and French International Monetary Policy under Bretton Woods', *Journal of Contemporary History*, 41, 4, 2006: 701–20.
9B. Eichengreen, *Exorbitant Privilege – The Rise and Fall of the Dollar*, New York: Oxford University Press, 2011.
10C.S. Chivvis, 'Charles de Gaulle, Jacques Rueff and French International Monetary Policy under Bretton Woods', *Journal of Contemporary History*, 41, 4, 2006: 701–20.
11Ibid.
12Ibid.
13Ibid.
14J. Joesten, 'The "Dollar Invasion" of Western Europe', *Challenge*, 12, 3, 1963: 34–36.
15C.S. Chivvis, 'Charles de Gaulle, Jacques Rueff and French International Monetary Policy under Bretton Woods', *Journal of Contemporary History*, 41, 4, 2006: 701–20.
16Joesten, 'The "Dollar Invasion" of Western Europe'.
17'De Gaulle's Throne of Gold', *Economic & Political Weekly,* 1, 1, 1966: 15–17.
18C. Karmin, *Biography of the Dollar – How the Mighty Buck Conquered the World and Why It's Under Siege*, New York: Crown Business, 2008.
19C.S. Chivvis, 'Charles de Gaulle, Jacques Rueff and French International Monetary Policy under Bretton Woods', *Journal of Contemporary History*, 41, 4, 2006: 701–20.
20'De Gaulle's Throne of Gold'.
21J.W. Pratt, 'De Gaulle and the United States: How the Rift Began', *The History Teacher,* 1, 4, 1968: 5–15.
22Ibid.
23J.W. Pratt, 'De Gaulle and the United States: How the Rift Began', *The History Teacher*, 1, 4, 1968: 5–15.
24R.N. Cooper, 'The Future of the Dollar', *Foreign Policy*, 11, 1973: 3–32.

25B. Eichengreen, 'Global Imbalances and the Lessons of Bretton Woods', 2004. NBER Working Paper No. 10497. Available at http://www.nber.org/papers/ w10497 (accessed on 14 April 2012).
26Ibid.
27P. Garber, *The Collapse of the Bretton Woods Fixed Exchange Rate System. A Retrospective on the Bretton Woods System: Lessons for International Monetary Reform*, Chicago: University of Chicago Press, 1993.
28Eichengreen, *Exorbitant Privilege*.
29C.A. Barker, 'The U.S. Money Crisis', *Financial Analysts Journal,* 25, 1, 1969: 45–58.
30Garber, *The Collapse of the Bretton Woods Fixed Exchange Rate System.*
31Eichengreen, 'Global Imbalances and the Lessons of Bretton Woods'.
32Eichengreen, *Exorbitant Privilege*.
33Ibid.
34Ibid.
35Eichengreen, "Global Imbalances and the Lessons of Bretton Woods."
36Garber, *The Collapse of the Bretton Woods Fixed Exchange Rate System.*
37P. Garber, *The Collapse of the Bretton Woods Fixed Exchange Rate System. A Retrospective on the Bretton Woods System: Lessons for International Monetary Reform,* Chicago: University of Chicago Press, 1993.
38Cooper, 'The Future of the Dollar'.
39Barker, 'The U.S. Money Crisis'.
40M.E. Sharpe, Inc., 'The Johnson Budget: How Realistic?', *Challenge,* 14, 4, 1966: 24–25.
41Vietnam War Statistics and Facts. Available at http://25thaviation.org/facts/ id430.htm (accessed on 14 April 2012).
42Sharpe Inc., 'The Johnson Budget: How Realistic?'
43W. Bonner and A. Wiggin, *Empire of Debt – The Rise of an Epic Financial Crisis*, New Jersey: John Wiley & Sons, 2006.
44A. Smith, *Paper Money*, New York: Summit Books, 1981.
45H.B. Cleveland and T.F. Huertas, 'Stagflation: How We got into It, How to Get Out,' *Foreign Affairs,* 58, 1, 1979: 103–20.
46H. Hazlitt, *The Inflation Crisis and How to Resolve It*, New York: Arlington House Publishers, 1978.
47Author's calculations from the data available in Hazlitt, *Inflation Crisis and How to Resolve It*.
48H. Hazlitt, *What You Should Know About Inflation*, Princeton: D. Van Nostrand Company Inc., 1965.
49H. Hazlitt, *The Inflation Crisis and How to Resolve It*, New York: Arlington House Publishers, 1978.
50Ibid.
51Barker, 'The U.S. Money Crisis'.
52Ibid.
53J.C. Ingram, 'The Dollar and the International Monetary System: A Retrospective View', *Southern Economic Journal,* 40, 4, 1974: 531–44.
54Cooper, 'The Future of the Dollar'.
55J. Rickards, *Currency Wars – The Making of the Next Financial Crisis*, New York: Portfolio/ Penguin, 2011.
56B. Eichengreen, 2004, 'Global Imbalances and the Lessons of Bretton Woods'.
57R.N. Cooper, 'The Future of the Dollar'.
58Rickards, *Currency Wars*.
59Ibid.
60Ibid.
61Cooper, 'The Future of the Dollar.' Morse, J., 'The Dollar as a Reserve Currency', *International Affairs, 55*, 3 1979: 359–66.
62S. Strange, 'The Dollar Crisis 1971', *International Affairs,* 48, 2, 1972: 191–216.
63Ingram, 'The Dollar and the International Monetary System: A Retrospective View'.

64Strange, 'The Dollar Crisis 1971'.
65Ibid.
66A. Smith, *Paper Money*, New York: Summit Books, 1981. Strange, 'The Dollar Crisis 1971'.
67Ingram, 'The Dollar and the International Monetary System: A Retrospective View'. Strange, 'The Dollar Crisis 1971'.
68Strange, 'The Dollar Crisis 1971'; C. Karmin, *Biography of the Dollar – How the Mighty Buck Conquered the World and Why It's Under Siege*, New York: Crown Business, 2008.
69Ibid.
70N. Lewis, *Gold – The Once and Future Money*, New Jersey: John Wiley & Sons, 2007.
71W. Bonner, 'The Beginning of Faith Based Money', 2011. Available at http://dailyreckoning.com/the-beginning-of-faith-based-money/ (accessed on 16 April 2012).
72Richard Nixon's Address to the Nation Outlining a New Economic Policy: The Challenge of Peace August 15, 1971.
73Ibid.
74Ibid.
75H. Hazlitt, *From Bretton Woods to World Inflation: A Study of Causes and Consequences,* Chicago: Regenry Gateway, 1984.
76C. A. Barker, 'The U.S. Money Crisis', *Financial Analysts Journal,* 25, 1, 1969: 45–58.
77Ibid.
78Eichengreen, 'Global Imbalances and the Lessons of Bretton Woods'.
79J.K. Galbraith, *Money – Whence It Came, Where It Went*, Boston and New York: Houghton Mifflin Company, 1995.
80When John Fitzgerald Kennedy was assassinated on 22 November 1963, John Connally, who was then the governor of Texas, was also travelling in the car. He was seriously injured. Unlike Kennedy, Connally survived.
81Eichengreen, *Exorbitant Privilege*.
82Rickards, *Currency Wars*.
83C. Prestowitz, *Rogue Nation: America's Unilateralism and the Failure of Good Intentions*, New York: Basic Books, 2003.
84Strange, 'The Dollar Crisis 1971'.
85Rickards, *Currency Wars*.
86Strange, 'The Dollar Crisis 1971'.
87Rickards, *Currency Wars*.
88Ibid.
89E.L. Morse, 'Crisis Diplomacy: The Demise of the Smithsonian Agreement', *The World Today,* 29, 6, 1973: 243–56.
90Strange, 'The Dollar Crisis 1971'.
91Ibid.
92Interview with Jim Rickards. Available at http://kingworldnews.com/king-worldnews/KWN_DailyWeb/Entries/2011/8/15_Rickards_-_KWN_Special_Release,_US_Will_Revalue_Gold_to_$7,000.html (accessed on 17 April 2012).
93G. Dorsh, 'The Federal Reserve Is Engineering Obama's Re-election Campaign', 2012. Available at http://www.sirchartsalot.com/article.php?id=161 (accessed on 19 September 2012).
94H. Hazlitt, *The Inflation Crisis and How to Resolve It*, New York: Arlington House Publishers, 1978.
95N. Lewis, *Gold – The Once and Future Money*, New Jersey: John Wiley & Sons, 2007.
96Data from http://www.gold.org
97Rickards, *Currency Wars*.
98A. Cockburn, 'What a Silly Bugger', 1999. Available at http://www.guard-ian.co.uk/theobserver/1999/aug/15/featuresreview.review (accessed on 17 April 2012).
99M.G. De Vries, *The International Monetary Fund 1972–1978: Cooperation on Trial*, Volume 1, Narration and Analysis, Washington, DC: International Monetary Fund, 1985).
100G.S. Tavlas, *The Collapse of the Exchange Rate Regimes: Causes, Consequences and Policy Responses* (Boston: Kluwer Academic Publishers Group, 1997).

101Morse, 'Crisis Diplomacy: The Demise of the Smithsonian Agreement'.
102Tavlas, *The Collapse of the Exchange Rate Regimes*.
103Data from http://www.gold.org.
104C. Karmin, *Biography of the Dollar – How the Mighty Buck Conquered the World and Why It's Under Siege*, New York: Crown Business, 2008.
105H. Hazlitt, *The Inflation Crisis and How to Resolve It*, New York: Arlington House Publishers, 1978.
106S. Das, *Extreme Money – Masters of the Universe and the Cult of Risk*, Upper Saddle River, NJ: FT Press, 2011.
107A. Smith, *Paper Money*, New York: Summit Books, 1981.

6: The American Promise

1D. Strahan, *The Last Oil Shock – A Survival Guide to the Imminent Extinction of Petroleum Man*, London: John Murray, 2007.
2I. Carson and V.V. Vaitheeswaran, *Zoom – The Global Race to Fuel the Car of the Future*, New York: Twelve, 2007.
3Ibid.
4Ibid.
5Ibid.
6Ibid.
7Aristotle, 'Gold and Money: More than Meets the Eye', 2010. Available at http://fofoa.blogspot.in/2010/04/gold-money-more-than-meets-eye.html (accessedon 18 April 2012).
8A. Smith, *Paper Money*, New York: Summit Books, 1981.
9Aristotle, 'Gold and Money: More than Meets the Eye', 2010. Available at http://fofoa.blogspot.in/2010/04/gold-moneymore-than-meets-eye.html (accessedon 18 April 2012).
10W.R. Childs, 'Origins of the Texas Railroad Commission's Power to Control Production of Petroleum: Regulatory Strategies in the 1920', *Journal of Policy History,* 2, 4, 1990: 353–87.
11Aristotle, 'Gold and Money: More than Meets the Eye', 2010. Available at http://fofoa.blogspot.in/2010/04/gold-moneymore-than-meets-eye.html (accessedon 18 April 2012).
12A. Smith, *Paper Money*, New York: Summit Books, 1981.
13Ibid.
14Data from http://www.opec.org
15J. Jagerson, *Profiting with Forex – The Most Effective Tools and Techniques for Trading*, New York: McGraw Hill, 2006.
16D. Strahan, *The Last Oil Shock – A Survival Guide to the Imminent Extinction of Petroleum Man*, London: John Murray, 2007.
17S.L. Spiegel, *The Other Israeli-Arab Conflict*, Chicago: University of Chicago Press, 1985.
18Ibid.
19Ibid.
20Ibid.
21S.L. Spiegel, *The Other Israeli-Arab Conflict*, Chicago: University of Chicago Press, 1985.
22B. Trumbore, 'The Arab Oil Embargo of 1973–1974', 2000. Available at http://www.buyandhold.com/bh/en/education/history/2002/arab.html (accessed on 19 April 2012).
23S. Leeb and D. Leeb, *The Oil Factor – Protect Yourself and Profit from the Coming Energy Crisis*, New York: Warner Business Books, 2005.
24B. Trumbore, 'The Arab Oil Embargo of 1973–1974', 2000. Available at http://www.buyandhold.com/bh/en/education/history/2002/arab.html (accessed on 19 April 2012).
25D. Strahan, *The Last Oil Shock – A Survival Guide to the Imminent Extinction of Petroleum Man,* London: John Murray, 2007.
26J.L. Williams, 'Oil Price History and Analysis', 2011. Available at http://www. wtrg.com/

prices.htm (accessed on 19 April 2012).
27J. C. Ingram, 'The Dollar and the International Monetary System: A Retrospective View', *Southern Economic Journal,* 40, 4, 1974: 531–43.
28W. Greider, *Secrets of the Temple: How the Federal Reserve Runs the Country*, New York: Simon and Schuster, 1987.
29B. Trumbore, 'The Arab Oil Embargo of 1973–1974', 2000. Available at http://www.buyandhold.com/bh/en/education/history/2002/arab.html (accessed on 19 April 2012).
30M. Friedman and R.D. Friedman, *Two Lucky People: Memoirs*, Chicago: University of Chicago Press, 1998.
31B. Trumbore, 'The Arab Oil Embargo of 1973–1974', 2000.Available at http://www.buyandhold.com/bh/en/education/history/2002/arab.html (accessed on 19 April 2012).
32N. Lewis, *Gold – The Once and Future Money*, New Jersey: John Wiley & Sons, 2007.
33B. Trumbore, 'The Arab Oil Embargo of 1973–1974', 2000.Available at http://www.buyandhold.com/bh/en/education/history/2002/arab.html (accessed on 19 April 2012).
34B. Powell, 'The Oil Shocks of the 1970s', 2005. Available at http://www.exponentialimprovement.com/cms/oilshock.shtml (accessed on 19 April 2012).
35H. Hazlitt, *The Inflation Crisis and How to Resolve It*, New York: Arlington House Publishers, 1978.
36J.L. Williams, 'Oil Price History and Analysis', 2011. Available at http://www.wtrg.com/prices.htm (accessed on 19 April 2012).
37L. Maugeri, *The Age of Oil: The Mythology, History, and the Future of the World's Most Controversial Resource*, Westport: Praeger Publishers, 2006.
38J. Amuzegar, 'OPEC and the Dollar Dilemma', *Foreign Affairs,* 56, 4, 1978: 740–50.
39Ibid.
40Ibid.
41D.E. Spiro, *The Hidden Hand of American Hegemony: Petrodollar Recycling and International Markets*, Ithaca: Cornell University, 1999.
42J. Amuzegar, 'OPEC and the Dollar Dilemma', Foreign Affairs, 56, 4, 1978: 740–50.
43D.E. Spiro, *The Hidden Hand of American Hegemony: Petrodollar Recycling and International Markets*, Ithaca: Cornell University, 1999.
44Ibid.
45Ibid.
46Ibid.
47W.R. Clark, *Petrodollar Warfare: Oil, Iraq and the Future of the Dollar*, Canada: New Society Publishers, 2005.
48S.E. Plaut, 'OPEC is not a Cartel', *Challenge,* 24, 5, 1981: 18–24.
49Ibid.
50Ibid.
51J. Amuzegar, 'OPEC and the Dollar Dilemma', *Foreign Affairs*, 56, 4, 1978: 740–50.
52S. Leeb and D. Leeb, *The Oil Factor – Protect Yourself and Profit from the Coming Energy Crisis*, New York: Warner Business Books, 2005.
53J.D. Hamilton, 'Historical Oil Shocks', 2011. Available at http://dss.ucsd. edu/~jhamilto/oil_history.pdf (accessed on 20 April 2012).
54Ibid.
55L. Maugeri, *The Age of Oil: The Mythology, History, and the Future of the World's Most Controversial Resource*, Westport, …: Praeger Publishers, 2006.
56Ibid.
57Aristotle, 'Gold and Money: More than Meets the Eye', 2010. Available at http://fofoa.blogspot.in/2010/04/gold-moneymore-than-meets-eye.html (accessedon 18 April 2012).
58A. Smith, *Paper Money*, New York: Summit Books, 1981.
59L. Maugeri, *The Age of Oil: The Mythology, History, and the Future of the World's Most Controversial Resource*, Westport, …: Praeger Publishers, 2006.
60Aristotle, 'Gold and Money: More than Meets the Eye', 2010. Available at http://fofoa.blogspot.in/2010/04/gold-moneymore-than-meets-eye.html (accessedon 18 April

2012).
61M.R. Simmons, *Twilight in the Desert – The Coming Saudi Oil Shock and the World Economy*, Hoboken, New Jersey: John Wiley & Sons, 2005.
62Ibid.
63B.J. Rahmani, 'The OPEC Mutliplier', *Foreign Policy*, 1983: 136–48.
64S. Leeb and D. Leeb, *The Oil Factor – Protect Yourself and Profit from the Coming Energy Crisis*, New York: Warner Business Books, 2005.
65M. Friedman and R.D. Friedman, *Two Lucky People: Memoirs*, Chicago: University of Chicago Press, 1998.
66R. Napier, *Anatomy of the Bear*, Hong Kong: CLSA Books, 2005.
67Ibid.
68W. Bonner and A. Wiggin, *Empire of Debt – The Rise of an Epic Financial Crisis*, New Jersey: John Wiley & Sons, 2006.
69R. Napier, *Anatomy of the Bear*, Hong Kong: CLSA Books, 2005.
70C.E. Walsh, 'FRBSF Economic Letter', 2004. Available at http://www.frbsf.org/ publications/economics/letter/2004/el2004-35.pdf (accessed on 21 April 2012).
71Gold prices sourced from http://www.gold.org.
72Ibid.
73Walsh, 'FRBSF Economic Letter'.
74Ibid.
75M. Friedman, *Money Mischief – Episodes in Monetary History*, New York: Harcourt Brace, 1994.
76Letters, 4 February 1966. Available at http://www.time.com/time/magazine/article/0,9171,898916-2,00.html (accessed on 21 April 2012).
77S. Das, *Extreme Money – Masters of the Universe and the Cult of Risk*, Upper Saddle River, NJ: FT Press, 2011.
78W. Greider, *Secrets of the Temple: How the Federal Reserve Runs the Country*, New York: Simon and Schuster, 1987.
79A.H. Bartels, 'Volcker's Revolution at the Fed', *Challenge*, 28, 4, 1985: 35–42.
80R. Napier, *Anatomy of the Bear*, Hong Kong: CLSA Books, 2005.
81Ibid.
82C. Karmin, *Biography of the Dollar – How the Mighty Buck Conquered the World and Why It's Under Siege*, New York: Crown Business, 2008.
83R. Napier, *Anatomy of the Bear*, Hong Kong: CLSA Books, 2005.
84M. Hutchinson, 'To Treat the Fed Like Volcker Did', Available at http://www.nytimes.com/2008/11/05/business/05views.html?_r=1 (accessed on 21 April 2012).
85Gold prices sourced from http://www.gold.org
86R. Napier, *Anatomy of the Bear*, Hong Kong: CLSA Books, 2005.
87N. Lewis, *Gold – The Once and Future Money*, New Jersey: John Wiley & Sons, 2007.
88C. Karmin, *Biography of the Dollar – How the Mighty Buck Conquered the World and Why It's Under Siege*, New York: Crown Business, 2008.
89R. Napier, *Anatomy of the Bear*, Hong Kong: CLSA Books, 2005.
90Bonner and Wiggin, *Empire of Debt*.
91John Cassidy, *How Markets Fail – The Logic of Economic Calamities*, London: Penguin Allen Lane, 2009.
92M. Anderson, *Revolution – The Reagan Legacy*, Stanford, CA: Hoover Press Publication, 1990.
93A. Laffer, 'The Laffer Curve: Past, Present, and Future'. Available at http://www.heritage.org/research/reports/2004/06/the-laffer-curve-past-present-and- future (accessed on 23 April 2012).
94Ibid.
95Ibid.
96P.A. Samuelson, 'Evaluating Reagonomics', *Challenge*, 27, 5, 1984: 4–11.
97Laffer, 'The Laffer Curve'.
98Data sourced from the Congressional Budget Office at http://www.cbo.gov/sites/default/files/

cbofiles/ftpdocs/120xx/doc12039/historicaltables[1].pdf (accessed on 23 April 2012).
99R. Duncan, *The Dollar Crisis – Causes, Consequences, Cures*, Singapore: John Wiley & Sons, 2005.
100Ibid.
101Author's calculations from data sourced from the Congressional Budget Office.
102J. Grant, 'The Paper Standard', 2005. Available at http://www.forbes.com/forbes/2005/0110/162.html (accessed on 23 April 2012).
103Bonner and Wiggin, *Empire of Debt*.
104J. Amuzegar, 'OPEC as Omen', *Foreign Affairs*, 77, 6, 1998: 95–111.
105A. Smith, *Paper Money*, New York: Summit Books, 1981. P.L. Volcker, 'The recycling problem revisited', *Challenge*, 23, 3, 1980: 3–14.
106Volcker, 'The Recycling Problem Revisited'.
107Clark, *Petrodollar Warfare*.
108Volcker, 'The Recycling Problem Revisited'.
109Ibid.
110Ibid.
111FDIC's Division of Research and Statistics, 'History of the eighties – Lessons for the future', 1997. Available at http://www.fdic.gov/bank/historical/history/ (accessed on 23 April 2012).
112Volcker, 'The Recycling Problem Revisited'.

7: The Man Who Would Be King

1H. Kaufman, *On Money and Markets: A Wall Street Memoir*, New York: McGraw-Hill, 2000.
2Ibid.
3P. Lynch and J. Rothchild, *One Up on Wall Street – How to Use What You Already Know to Make Money in the Market*, New York: Fireside, 2000.
4'The Greatest Investors'. Available at http://www.investopedia.com/university/greatest/peterlynch.asp#axzz1tEA3UAU3 (accessed on 27 April 2012).
5Ibid.
6E.J. Weiner, *What Goes Up – The Uncensored History of Modern Wall Street as Told by the Bankers, Brokers, CEOs, and Scoundrels Who Made It Happen*, New York: Little, Brown and Company, 2005.
7Data sourced from the Congressional Budget Office at http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/120xx/doc12039/historicaltables[1].pdf (accessed on 23 April 2012).
8A. Greenspan, *The Age of Turbulence – Adventures in a New World*, London: Penguin Allen Lane, 2007.
9Ibid.
10Ibid.
11Statement available at http://www.federalreserveeducation.org/about-the-fed/ history/ (accessed on 27 April 2012).
12R.J. Barbera, *The Cost of Capitalism – Understanding Market Mayhem and Stabilizing Our Economic Future*, New Delhi: Tata McGraw-Hill, 2009.
13R. Batra, *Greenspan's Fraud – How Two Decades of His Policies Have Undermined the Global Economy*, New York: Palgrave, 2005.
14Ibid.
15A. Greenspan, *The Age of Turbulence – Adventures in a New World*, London: Penguin Allen Lane, 2007.
16Ibid.
17A. Greenspan, 'Gold and Economic Freedom', 1966. Available at http://www.constitution.org/mon/greenspan_gold.htm (accessed on 28 April 2012).
18Data sourced from the Congressional Budget Office at http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/120xx/doc12039/historicaltables[1].pdf (accessed on 23 April 2012).
19Congressional and Budget Office, 'The Economic Effects of the Savings and Loans Crisis 1992', Available at http://www.cb o.gov/sites/default/files/cbofiles/ftpdocs/100xx/

doc10073/1992_01_theeconeffectsofthesavings.pdf (accessed on 27 April 2012).
20A. Greenspan, *The Age of Turbulence – Adventures in a New World*, London: Penguin Allen Lane, 2007.
21Ibid.
22F.S. Mishkin, *The Economics of Money, Banking and Financial Markets*, New York: Pearson, 2007.
23Ibid.
24Congressional and Budget Office, 'The Economic Effects of the Savings and Loans Crisis'.
25F.S. Mishkin, *The Economics of Money, Banking and Financial Markets*, New York: Pearson, 2007.
26Congressional and Budget Office, 'The Economic Effects of the Savings and Loans Crisis'.
27R.W. Bennett and C. Loucks, 'Politics and the Rescue of Insolvent Savings and Loans before 1989,' *Public Choice,* 76, 3, 1993: 175–87.
28F.S. Mishkin, *The Economics of Money, Banking and Financial Markets*, New York: Pearson, 2007.
29Ibid.
30Congressional and Budget Office, 'The Economic Effects of the Savings and Loans Crisis'.
31K. Calavita, R. Tillman, and H.N. Pontell, 'The Savings and Loan Debacle, Financial Crime and the State', *The Annual Review of Sociology,* 23, 1997: 19–38.
32F.S. Mishkin, *The Economics of Money, Banking and Financial Markets*, New York: Pearson, 2007.
33Ibid.
34A. Greenspan, *The Age of Turbulence – Adventures in a New World*, London: Penguin Allen Lane, 2007.
35Congressional and Budget Office. 'The Economic Effects of the Savings and Loans Crisis'.
36A. Greenspan, *The Age of Turbulence – Adventures in a New World*, London: Penguin Allen Lane, 2007.
37Congressional and Budget Office, 'The Economic Effects of the Savings and Loans Crisis'.
38K. Calavita, R. Tillman, and H.N. Pontell, 'The Savings and Loan Debacle, Financial Crime and the State' *The Annual Review of Sociology*, 23, 1997: 19-38.

8: When a Tokyo Palace Became More Expensive than California

1W.M. Burke, 'Rising Sun … Falling Dollar', *Challenge,* 38, 4, 1995: 46–51.
2Ibid.
3Ibid.
4N. Lewis, *Gold – The Once and Future Money*, New Jersey: John Wiley & Sons, 2007.
5W.M. Burke, 'Rising Sun … Falling Dollar', *Challenge*, 38, 4, 1995: 46–51.
6Ibid.
7N. Lewis, *Gold – The Once and Future Money*, New Jersey: John Wiley & Sons, 2007.
8R.A. Devine, T.H. Breen, G.M. Frederickson, R.H. Williams, A.J. Gross, and H.W. Brands, *America Past and Present II: Since 1865*, New York: Pearson Longman, 2007.
9Ibid.
10I. Makoto, 'Is the Japanese Economy in Crisis?', *International Political Economy,* 1, 1, 1994: 29–51.
11Ibid.
12L.J. Schoppa, 'Japan, the Reluctant Reformer', *Foreign Affairs,* 80, 5, 2001: 76–90.
13P. Krugman, *The Return of Depression Economics and the Crisis of 2008*, London: Penguin, 2008.
14I. Makoto, 'Is the Japanese Economy in Crisis?', *International Political Economy*, 1, 1, 1994: 29–51.
15W.H. Overhott, 'Japan's Economy at War with Itself,' *Foreign Affairs,* 81, 1, 2002: 134–47.
16I. Makoto, 'Is the Japanese Economy in Crisis?', *International Political Economy*, 1, 1, 1994: 29–51.

17W.M. Burke, 'Rising Sun … Falling Dollar', *Challenge*, 38, 4, 1995: 46–51.
18Ibid.
19L.J. Schoppa, 'Japan, the Reluctant Reformer', *Foreign Affairs*, 80, 5, 2001: 76–90.
20I. Makoto, 'Is the Japanese Economy in Crisis?', *International Political Economy*, 1, 1, 1994: 29–51.
21Ibid.
22Ibid.
23Ibid.
24L.J. Schoppa, 'Japan, the Reluctant Reformer', *Foreign Affairs*, 80, 5, 2001: 76–90.
25R. Duncan, *The Dollar Crisis – Causes, Consequences, Cures*, Singapore: John Wiley & Sons (Asia) Pvt. Ltd, 2005.
26Ibid.
27W.H. Overhott, 'Japan's Economy at War with Itself,' *Foreign Affairs*, 81, 1, 2002: 134–47.
28P. Krugman, *The Return of Depression Economics and the Crisis of 2008*, London: Penguin, 2008.
29Ibid.
30N. Lewis, *Gold – The Once and Future Money*, New Jersey: John Wiley & Sons, 2007.
31Ibid.
32L.J. Schoppa, 'Japan, the Reluctant Reformer', *Foreign Affairs*, 80, 5, 2001: 76–90.
33R. Duncan, *The Dollar Crisis – Causes, Consequences, Cures*, Singapore: John Wiley & Sons (Asia) Pvt. Ltd, 2005.
34Ibid.
35L.J. Schoppa, 'Japan, the Reluctant Reformer', *Foreign Affairs*, 80, 5, 2001: 76–90.
36Ibid.
37I. Makoto, 'Is the Japanese Economy in Crisis?', *International Political Economy*, 1, 1, 1994: 29–51.
38M.R. King, 'Who Triggered the Asian Financial Crisis?', *Review of International Political Economy,* 8, 3, 2001: 438–66.
39W.H. Overhott, 'Japan's Economy at War with Itself,' *Foreign Affairs*, 81, 1, 2002: 134–47.
40I. Makoto, 'Is the Japanese Economy in Crisis?', *International Political Economy*, 1, 1, 1994: 29–51.
41Ibid.
42R. Duncan, *The Dollar Crisis – Causes, Consequences, Cures*, Singapore: John Wiley & Sons (Asia) Pvt. Ltd, 2005.
43King, 'Who Triggered the Asian Financial Crisis?'.
44D.B. Kunz, 'The Fall of the Dollar Order: The World the United States Is Losing', *Foreign Affairs,* 74, 4, 1995: 22–26.
45R.G. Rajan, *Fault Lines – How Hidden Fractures Still Threaten the World Economy* (Noida, India: Collins Business, 2010).
46Ibid. Also, 'Interview with Jeffrey Sachs', *Frontline,* Spring, 1997.
47R.G. Rajan, *Fault Lines – How Hidden Fractures Still Threaten the World Economy* (Noida, India: Collins Business, 2010).
48R. Duncan, *The Dollar Crisis – Causes, Consequences, Cures*, Singapore: John Wiley & Sons (Asia) Pvt. Ltd, 2005.
49R.G. Rajan, *Fault Lines – How Hidden Fractures Still Threaten the World Economy* (Noida, India: Collins Business, 2010).
50King, 'Who Triggered the Asian Financial Crisis?'.
51R. Batra, *Greenspan's Fraud – How Two Decades of His Policies Have Undermined the Global Economy*, New York: Palgrave, 2005.
52Ibid.
53J.B. Taylor, 'Discretion versus Policy Rules in Practice', 1993. Available at www.stanford.edu/~johntayl/Papers/Discretion.pdf (accessed on 2 May 2012).
54R. Batra, *Greenspan's Fraud – How Two Decades of His Policies Have Undermined the Global Economy*, New York: Palgrave, 2005.
55M. Kamradt and J.W. Labuszewski, 'Fed Exercises "Greenspan Put"', 2012. Available at

http://www.cmegroup.com/education/files/fed-exercises-greenspan-put.pdf (accessed on 2 May 2012).
56M. Miller, P. Weller, and L. Zhang, 'Moral Hazard and the US Stock Market: Analysing the "Greenspan Put"', *The Economic Journal*, 112, 478, Conference Papers (2002): 171–86.
57A. Lashinsky, 'Remembering Netscape: The Birth of the Web', 2011. Available at http://money.cnn.com/magazines/fortune/fortune_archive/2005/07/25/8266639/index.htm (accessed on 2 May 2012).
58L. Zuckerman, 'With Internet Cachet, Not Profit, a New Stock is Wall St.'s Darling', *The New York Times*, 10 August 1995.
59Zuckerman, 'With Internet Cachet, Not Profit, a New Stock is Wall St.'s Darling'.
60D. Shelf, 'Crank It Up', 2000. Available at http://www.wired.com/wired/archive/8.08/loudcloud.html?pg=4 (accessed on 2 May 2012).
61A. Kessler, *Wall Street Meat – My Narrow Escape from the Stock Market Grinder*, New York: Harper Business, 2004.
62King, 'Who Triggered the Asian Financial Crisis?'.
63Ibid.
64R. Sharma, *Breakout Nations – In Pursuit of the Next Economic Miracle*, London: Penguin Allen Lane, 2012.
65King, 'Who Triggered the Asian Financial Crisis?'.
66Ibid.
67Ibid.
68Ibid.
69R.J. Barbera, *The Cost of Capitalism – Understanding Market Mayhem and Stabilizing Our Economic Future*, New Delhi: Tata McGraw-Hill, 2009.
70B. Einhorn and R. Corben, 'In Thailand, the Banks' Holiday Is Over,' 1998. Available at http://www.businessweek.com/stories/1997-03-16/in-thailand-the-banks-holiday-is-over-intl-edition (accessed on 3 May 2012).
71N. Lewis, *Gold – The Once and Future Money*, New Jersey: John Wiley & Sons, 2007.
72R. Cheetham, 'Asia Crisis' (paper presented at the conference on U.S. ASEAN-Japan Policy Dialogue, School of Advanced International Studies of Johns Hopkins University, 1998.
73King, 'Who Triggered the Asian Financial Crisis?'.
74N. Lewis, *Gold – The Once and Future Money*, New Jersey: John Wiley & Sons, 2007.
75Cheetham, 'Asia Crisis'.
76N. Lewis, *Gold – The Once and Future Money*, New Jersey: John Wiley & Sons, 2007.
77B. Einhorn and R. Corben, 'Thailand's Finance Minister: The Economy Is in Shambles', 1998. Available at http://www.businessweek.com/1998/33/b3591018.htm (accessed on 3 May 2012).
78N. Lewis, *Gold – The Once and Future Money*, New Jersey: John Wiley & Sons, 2007.
79R. Duncan, *The Dollar Crisis – Causes, Consequences, Cures*, Singapore: John Wiley & Sons (Asia) Pvt. Ltd, 2005.
80N. Lewis, *Gold – The Once and Future Money*, New Jersey: John Wiley & Sons, 2007.
81R.G. Rajan, *Fault Lines – How Hidden Fractures Still Threaten the World Economy* (Noida, India: Collins Business, 2010).
82Ibid.

9: Irrational Exuberance

1V. Niederhoffer, *The Education of a Speculator*, Hoboken, New Jersey: John Wiley & Sons, 1997.
2'NASDAQ' originally stood for 'National Association of Securities Dealers Automated Quotations'.
3A. Kessler, *Wall Street Meat – My Narrow Escape from the Stock Market Grinder*, New York: Harper Business, 2004.
4A. Greenspan, *The Age of Turbulence – Adventures in a New World*, London: Penguin Allen

Lane, 2007.

5R. Batra, *Greenspan's Fraud – How Two Decades of His Policies Have Undermined the Global Economy*, New York: Palgrave, 2005.

6Ibid.

7A. Greenspan, 'The Challenge of Central Banking in a Democratic Society', 1996. Available at http://www.federalreserve.gov/boarddocs/speeches/1996/19961205.htm (accessed on 11 May 2012).

8R.J. Shiller, *Irrational Exuberance*, New York: Doubleday, 2005.

9R. Batra, *Greenspan's Fraud – How Two Decades of His Policies Have Undermined the Global Economy*, New York: Palgrave, 2005.

10Minutes of the FOMC meeting, 4–5 February 1997. Available at http://www.federalreserve.gov/monetarypolicy/files/FOMC19970205meeting.pdf (accessed on 11 May 2012).

11Minutes of the FOMC meeting, 25 March 1997. Available at http://www.fed-eralreserve.gov/monetarypolicy/files/FOMC 19970325meeting.pdf (accessed on 11 May 2012).

12A. Greenspan, *The Age of Turbulence – Adventures in a New World*, London: Penguin Allen Lane, 2007.

13M. Mahar, *Bull! – A History of the Boom and Bust, 1982–2004*, New York: Harper Business, 2004.

14Ibid.

15A. Kessler, *Wall Street Meat – My Narrow Escape from the Stock Market Grinder* (New York: Harper Business, 2004).

16C. Mollenkamp and K. Lunderaard, 'How Net Fever Sent Shares of a Firm on 3-Day Joy Ride', *The Wall Street Journal*, 9 December 1998.

17Ibid.

18Ibid.

19M. Lewis, *The Future Just Happened*, London: Coronet Books, 2001.

20Ibid.

21E.J. Weiner, *What Goes Up – The Uncensored History of Modern Wall Street as Told by the Bankers, Brokers, CEOs, and Scoundrels Who Made It Happen*, New York: Little, Brown and Company, 2005.

22M. Mahar, Bull! – *A History of the Boom and Bust, 1982-2004*, New York: Harper Business, 2004.

23E.J. Weiner, *What Goes Up*.

24N.N. Taleb, *The Black Swan – The Impact of the Highly Improbable*, New York: Random House, 2007.

25B.M. Barber and T. Odean, 'Boys Will Be Boys: Gender, Overconfidence, and Common Stock Investment', *The Quarterly Journal of Economics*, 116, 1, 2001: 261–92.

26A. Kessler, *Wall Street Meat – My Narrow Escape from the Stock Market Grinder* (New York: Harper Business, 2004).

27M. Mahar, *Bull! – A History of the Boom and Bust, 1982-2004*, New York: Harper Business, 2004.

28A. Kessler, *Wall Street Meat – My Narrow Escape from the Stock Market Grinder* (New York: Harper Business, 2004).

29R. Lowenstein, *Origins of the Crash – The Greatest Bubble and Its Undoing*, New York: Penguin, 2005.

30M. Mahar, *Bull! – A History of the Boom and Bust, 1982-2004*, New York: Harper Business, 2004.

31Ibid.

32Ibid.

33M. Lewis, *The New New Thing – A Silicon Valley Story*, New York: W.W. Norton, 2000.

34M. Mahar, *Bull! – A History of the Boom and Bust, 1982-2004*, New York: Harper Business, 2004.

35R. Lowenstein, *Origins of the Crash – The Great Bubble and Its Undoing*, New York: Penguin, 2004.

36M. Mahar, *Bull! – A History of the Boom and Bust, 1982-2004*, New York: Harper Business, 2004.
37R. Lowenstein, *Origins of the Crash – The Great Bubble and Its Undoing*, New York: Penguin, 2004.
38M. Phillips, 'AOL IPO: Take Two!', 2009. Available at http://blogs.wsj.com/marketbeat/2009/12/10/aol-ipo-take-two/ (accessed on 19 May 2012).
39H. Schilit, *Financial Shenanigans: How to Detect Accounting Gimmicks and Fraud in Financial Reports*, New Delhi: Tata McGraw-Hill, 2003.
40R. Lowenstein, *Origins of the Crash – The Great Bubble and Its Undoing*, New York: Penguin, 2004.
41Ibid.

10: But a Pin Lies in Wait for Every Bubble

1A. Greenspan, *The Age of Turbulence – Adventures in a New World*, London: Penguin Allen Lane, 2007.
2R. Lowenstein, *When Genius Failed*, New York: Random House, 2001.
3'Interview with Jeffrey Sachs', *Frontline,* Spring, 1997.
4F.R. Edwards, 'Hedge Funds and the Collapse of Long Term Capital Management,' *The Journal of Economic Perspectives,* 13, 2, 1999: 189–210.
5R. Lowenstein, *When Genius Failed*, New York: Random House, 2001.
6F.R. Edwards, 'Hedge Funds and the Collapse of Long Term Capital Management,' *The Journal of Economic Perspectives*, 13, 2, 1999: 189–210. S. Das, *Extreme Money – Masters of the Universe and the Cult of Risk*, Upper Saddle River, NJ: FT Press, 2011.
7R. Lowenstein, *When Genius Failed*, New York: Random House, 2001.
8F.R. Edwards, 'Hedge Funds and the Collapse of Long Term Capital Management,' *The Journal of Economic Perspectives*, 13, 2, 1999: 189–210.R. Lowenstein, *When Genius Failed*, New York: Random House, 2001.
9S. Das, *Traders, Guns and Money* (New Delhi: FT Press, 2007).
10F.R. Edwards, 'Hedge Funds and the Collapse of Long Term Capital Management,' *The Journal of Economic Perspectives*, 13, 2, 1999: 189–210.
11Ibid.
12S. Das, *Traders, Guns and Money – Knowns and Unknowns in the Dazzling World of Derivatives*, New Delhi: Pearson Power, 2006.
13Ibid.
14R. Lowenstein, *When Genius Failed*, New York: Random House, 2001. F.R. Edwards, 'Hedge Funds and the Collapse of Long Term Capital Management,' *The Journal of Economic Perspectives*, 13, 2, 1999: 189–210.
15F.R. Edwards, 'Hedge Funds and the Collapse of Long Term Capital Management,' *The Journal of Economic Perspectives*, 13, 2, 1999: 189–210.
16Ibid.
17Ibid.
18E.J. Weiner, *What Goes Up – The Uncensored History of Modern Wall Street as Told by the Bankers, Brokers, CEOs, and Scoundrels Who Made It Happen*, New York: Little, Brown and Company, 2005.
19M. Lewis, 'How the Eggheads Cracked', *The New York Times Magazine,* New York, 24 January 1999.
20R. Lowenstein, *When Genius Failed*, New York: Random House, 2001.
21Ibid.
22P. Temple, *Hedge Funds: The Courtesans of Capitalism*, Chichester: John Wiley & Sons, 2001.
23M. Lewis, 'How the Eggheads Cracked', *The New York Times Magazine*, New York, 24 January 1999.
24S. Das, *Traders, Guns and Money – Knowns and Unknowns in the Dazzling World of*

Derivatives, New Delhi: Pearson Power, 2006.
25M. Lewis, 'How the Eggheads Cracked', *The New York Times Magazine*, New York, 24 January 1999.
26X. Guo, 'The Fall of Long-Term Capital Management', *Lingnan Journal of Banking, Finance and Economics*, Vol. 1, Article 1, 2008. Available at http://com-mons.ln.edu.hk/ljbfe/vol1/iss1/1 (accessed on 18 May 2012).
27F.R. Edwards, 'Hedge Funds and the Collapse of Long Term Capital Management,' *The Journal of Economic Perspectives*, 13, 2, 1999: 189–210.
28A. Greenspan, 'Question: Is There a New Economy?' 1998. Available at http://www.federalreserve.gov/boarddocs/speeches/1998/19980904.htm (accessed on 18 May 2012).
29Ibid.
30R. Batra, *Greenspan's Fraud – How Two Decades of His Policies Have Undermined the Global Economy*, New York: Palgrave McMillan, 2005.
31R.J. Shiller, *Irrational Exuberance*, New York: Doubleday, 2005.
32A. Kessler, *Wall Street Meat – My Narrow Escape from the Stock Market Grinder* (New York: Harper Business, 2004).
33Ibid.
34Ibid.
35R.J. Shiller, *Irrational Exuberance*, Princeton: Princeton University Press, 2000.
36Ibid.
37J. Glassman and K. Hassett, *Dow 36,000: The New Strategy for Profiting from the Coming Rise of the Stock Market*, New York: Random House, 1999.
38M. Gimen, 'Meet the Dumbest Dot-Com in the World', *Fortune,* July 2010.
39K. Mieszkowski, 'Fumble.com: Internet Companies Threw Millions into the Air at the Super Bowl. They're Still Pretending They Scored a Touchdown', *Salon*, May 2000.
40Ibid.
41R.J. Shiller, *Irrational Exuberance*, Princeton: Princeton University Press, 2000.
42J. Cassidy, *Dot.con: The Greatest Story Ever Sold*, New York: HarperCollins 2002.
43M. Lewis, *Panic – The Story of Modern Financial Insanity,* Place: Publ., 2008.
44J. Willoughby, "Burning Up," *Barron's,* 20 March 2000.
45Ibid.
46J. Cassidy, *Dot.con: The Greatest Story Ever Sold*, New York: HarperCollins 2002.
47Ibid.
48Ibid.
49J.K. Galbraith, *A Short History of Financial Euphoria*, New York: Penguin, 1994.
50M. Lewis, 'In Defense of the Boom', *The New York Times Magazine,* New York, 27 October 2002.
51A. Greenspan, *The Age of Turbulence – Adventures in a New World*, London: Penguin Allen Lane, 2007.
52R. Lowenstein, *Origins of the Crash – The Great Bubble and Its Undoing*, New York: Penguin, 2004.
53This quote is taken from Greenspan's appearance before the Joint Economic Committee of Congress in June 1999.
54A. Greenspan, 'Economic Volatality', 2002. Available at http://www.federalreserve. gov/boarddocs/speeches/2002/20020830/default.htm (accessed on 19 May 2012).
55R.G. Rajan, *Fault Lines – How Hidden Fractures Still Threaten the World Economy* (Noida, India: Collins Business, 2010).
56J.K. Galbraith, *The Economics of Innocent Fraud – Truth of Our Time*, New York: Houghton Mifflin Company, 2004.
57W. Buffett, 'Chairman's Annual Letter to the Shareholders of Berkshire Hathaway', 2001. Available at http://www.berkshirehathaway.com/letters/2000pdf.pdf (accessed on 19 May 2012).
58J. Useem, 'Dot-Coms: What Have We Learned?', *Fortune*, 30 October 2000.
59D. Barry, *Dave Barry's Money Secrets, Like, Why Is There a Giant Eyeball on the Dollar*,

New York: Crown Publishers, 2006.

11: Conclusion

1F. Martin, *Money – The Unauthorised Biography*, London: The Bodley Head, 2013.
2Ibid.
3As quoted in M. Flandreau and … Ugolini, 'Where It All Began: Lending of Last Resort and the Making of Sterling as the Leading International Currency in the 1860s', September 2010. Available at http://www.ecb.europa.eu/events/conferences/html/cbc6/7flaundreau6cbc.pdf (accessed on 8 September 2013).
4W. Bagehot, *Lombard Street – A Description of the Money Market*, New York: John Wiley & Sons, 1873.
5Ibid.
6F. Martin, *Money – The Unauthorised Biography*, London: The Bodley Head, 2013.
7W. Bagehot, *Lombard Street – A Description of the Money Market*, New York: John Wiley & Sons, 1873.
8Ibid.
9J. Lanchester, *I.O.U. – Why Everyone Owes Everyone and No One Can Pay*, New York: Simon & Schuster, 2010.
10M. Buchanan, *Ubiquity – The Physics of Complex Systems*, Hyderabad: Universities Press, 2005.
11Ibid.
12Ibid.
13Ibid.
14J. Mauldin and J. Tepper, *Endgame – The End of the Debt Supercycle and How It Changes Everything* (Hoboken, New Jersey: Wiley, 2011).
15Ibid.
16N.N. Taleb, *Antifragile*, London: Random House, 2012.
17M. Blyth, *Austerity – The History of a Dangerous Idea*, New York: Oxford University Press, 2013.
18Ibid.
19A. Edwards, 'Is Mark Carney the New Alan Greenspan?', *Societe Generale*, 8 February 2013.
20Ibid.
21D. Strahan, *The Last Oil Shock – A Survival Guide to Imminent Extinction of Petroleum Man*, London: John Murray, 2007.
22Ibid.
23B. Eichengreen, *Exorbitant Privilege – The Rise and Fall of the Dollar*, New York: Oxford University Press, 2011.
24Data sourced from http://www.imf.org/external/np/sta/cofer/eng/cofer.pdf (accessed on 9 September 2013).
25J. Cassidy, *How Markets Fail – The Logic of Economic Calamities*, New York: Allen Lane, 2009.
26D.L. Thorton, 'How Did We Get to Inflation Targeting and Where Do We Need to Go to Now? A Perspective from the U.S. Experience', *Federal Reserve Bank of St. Louis Review,* 94, 1, 2012: 65–81. Available at http://research.stlouisfed.org/publications/review/12/01/65-82Thornton.pdf (accessed on 9 September 2013).
27N. Ferguson, *The Ascent of Money – A Financial History of the World*, London: Allen Lane, 2008.
28S.D. King, *When the Money Runs Out*, New Haven and London: Yale University Press, 2013.
29Ibid.
30Ibid.
31F. Martin, *Money – The Unauthorised Biography*, London: The Bodley Head, 2013.
32Ibid.
33V. Kaul, 'In Theory, Rupee at 72 to a Dollar Is the Solution to CAD," *Forbes India*, 4 October

2013.

34R.G. Rajan and E. Prasad, Why an Inflation Objective?', …. Available at http://faculty.chicagobooth.edu/raghuram.rajan/research/papers/Op%20Ed%201%20on%20Monetary%20Policy%20Why%20An%20Inflation%20Objective.pdf (accessed on 9 September 2013).

35Author's calculations from various sources.

36B. Bernanke, 'On Milton Friedman's Ninetieth Birthday', 2002. Available at http://www.federalreserve.gov/BOARDDOCS/SPEECHES/2002/20021108/ (accessed on 10 September 2013).

37S.D. King, *When the Money Runs Out*, New Haven and London: Yale University Press, 2013.

38Ibid.

39M. Buchanan, *Forecast – What Physics, Meteorology and the Natural Sciences Can Teach Us about Economics*, London: Bloomsbury, 2013.

40J. Cassidy, *How Markets Fail – The Logic of Economic Calamities*, New York: Allen Lane, 2009.

41J. Cassidy, 'Interview with Eugene Fama', 2010. Available at http://www.newyorker.com/online/blogs/johncassidy/2010/01/interview-with-eugene-fa- ma.html (accessed on 9 September 2013).

42J. Cassidy, *How Markets Fail – The Logic of Economic Calamities*, New York: Allen Lane, 2009.

43R. Patel, *The Value of Nothing*, London: Portbello Books, 2009.

44Ibid.

45110th Congress House of Representatives Committee on Oversight and Government Reform, 2008. 'The Financial Crisis and the Role of Federal Regulators', hearing of October 23, 2008. Available at https://house.resource.org/110/org.cspan.281958-1.pdf (accessed on 9 September 2013).

46G. Akerlof and P. Romer, 'Looting: The Economic Underworld of Bankruptcy for Profit'. Brookings Papers on Economic Activity, 2, 1993. Available at http://www.brookings.edu/~/media/projects/bpea/1993%202/1993b_bpea_akerlof_romer_hall_mankiw.pdf (accessed on 9 September 2013).

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About the Book

The US dollar moves the world. It makes the United States of America the world's only superpower. But things weren't always as they are now. The British pound was the world's premier international currency, much up to the first half of the twentieth century. And then things changed and the dollar became the international currency that every country in the world wanted.

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About the Author

Vivek Kaul was born and brought up in Ranchi. He ran with the herd to do an MBA, only to realize that it was a waste of time. He then ended up in a PhD programme, and dropped out of it three years later. Like many other confused souls, he landed up in journalism and found his true calling in reading, writing and being lazy.

Currently, Vivek writes an eponymous Diary and a Letter for equitymaster.com. His writing has also appeared in *Times of India*, *Hindu*, *Hindu Business Line*, *Businessworld*, *Business Today*, *India Today*, *Mid-Day*, *Business Standard*, *Forbes India*, *Deccan Chronicle*, *Bangalore Mirror*, *Mumbai Mirror*, *Asian Age*, *Mutual Fund Insight*, *Wealth Insight*, *Swarajya, Dainik Jagran, Daily News and Analysis (DNA), Economic Times* and others. In online media his writing has appeared on *Rediff*, *Firstpost*, *Huffington Post*, *Quartz*, *Newslaundry* and BBC.

Vivek has also authored *India's Big Government: The Intrusive State and How It Is Hurting Us*.

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'Time is like money in more ways than you think. If you ask someone what time it is, you will receive a prompt reply; but then ask them what time is. You will likely receive a blank expression. So too is it with money. We spend it, save it, earn it, lust after it. Asking someone what a thing costs will draw a speedy reply. But now ask them what money is ... Vivek has asked himself precisely this question and this fine book is a culmination of his dogged pursuit of the answer. Join him in his rich intellectual voyage and see for yourself where it leads. For in answering this simple question the seemingly isolated events and crises of history – distant and recent alike – are shown to have a surprisingly common theme.'

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– Kevin Maney, author of *The Maverick and His Machine: Thomas Watson Sr. and the Making of IBM*

'In this detailed study of the evolution of money and the financial system, Vivek Kaul explains how events, many of them seemingly insignificant, have over the past few years, decades, and even centuries played a crucial role in the current financial crisis. The book is absorbing, informative, and most topical.'

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